Disclaimer

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

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

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

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

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Overview for Request cder_mpl1p_wp107

Request ID: cder_mpl1p_wp107_nsdp_v01

Request Description: In this report we described utilization of diabetes mellitus drugs and anti-obesity medications in the Sentinel Distributed Database (SDD) since January 1, 2008. Specifically, we described the number, baseline characteristics, and cumulative exposure of individuals initiating the products of interest overall and within subgroups. We also described gaps between individual exposure episodes.

Sentinel Routine Querying Module: Type 5 Cohort Identification and Descriptive Analysis (CIDA) module, version 13.1.2, with custom programming.

Data Source: We distributed this request to six Sentinel Data Partners on February 21, 2025. 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 January 1, 2008 through May 31, 2024. Please see Appendix A for a list of dates of available data for each Data Partner.

Study Design: We identified and described demographic and clinical characteristics of individuals initiating treatment with one of the exposures of interest. The analysis characterized cumulative exposure duration by examining all episodes of use beginning with the first eligible exposure, as well as the first exposure episode alone. Gaps between episodes were also described overall and by first episode alone. This is a Type 5 analysis in the Query Request Package (QRP) documentation.

Exposures: The exposures of interest were defined using National Drug Codes (NDCs) in the outpatient pharmacy dispensing data[1] for the drugs and drug classes listed below:

- sodium-glucose cotransporter-2 (SGLT-2) inhibitor
- dipeptidyl peptidase-4 (DPP-4) inhibitor
- DPP-4 inhibitor/SGLT-2 inhibitor combination product
- glucagon-like peptide-1 (GLP-1) agonist
- glucose-dependent insulinotropic polypeptide (GIP)/GLP-1 agonist
- canagliflozin, a SGLT-2 inhibitor
- Saxenda® (liraglutide), a GLP-1 agonist
- Ozempic® (semaglutide), a GLP-1 agonist
- Wegovy® (semaglutide), a GLP-1 agonist
- Rybelsus® (semaglutide), a GLP-1 agonist
- Mounjaro® (tirzepatide), a GIP/GLP-1 agonist
- Zepbound® (tirzepatide), a GIP/GLP-1 agonist.

We defined initiation as the first dispensing code for the exposure of interest (evaluated in separate cohorts) after a period of 365 days without prior evidence of that exposure (exposure "washout") in the dispensing table. An individual's earliest observed initiation that met inclusion/exclusion criteria was considered their index date. To assess cumulative exposure duration, we created exposure episodes based on the number of days of product supplied per dispensing. Overlapping days' supplies were adjusted to be non-overlapping and concatenated to create continuous exposure episodes; we did not artificially bridge gaps. Individuals could contribute any number of exposure episodes to the assessment of cumulative exposure and gaps; subsequent exposure episodes after the index date were not required to meet washout criteria. For a list of non-proprietary and proprietary drug names used to define the exposures of interest and exposure washout, please see Appendix B.

Cohort Eligibility Criteria: Eligible individuals were required to have 365 days of continuous medical and prescription drug coverage in the year prior to the index date, allowing for enrollment gaps of up to 45 days. Eligible individuals were required to be aged 0-110 years on the index date and have a recorded sex of male or female. No other inclusion/exclusion criteria were applied.

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Baseline Characteristics: Baseline characteristics were assessed for the 12 exposure groups of interest. Baseline characteristics were also stratified by age group (<18, 18-24, 25-34, 35-44, 45-64, 65+ years) for SGLT-2 inhibitor, DPP-4 inhibitor, DPP-4 inhibitor/SGLT-2 inhibitor combination product, GLP-1 agonist, and GIP/GLP-1 agonist. We assessed the following demographic characteristics on the index date: age (continuous and categorical [<12, 12-17, 18-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75+ years]), sex, race, Hispanic ethnicity, and index year.

We assessed the following clinical characteristics in the 365 days prior to the first drug initiation: adapted Diabetes Complications Severity Index (aDCSI)[2], predicted probability of frailty[3], combined comorbidity score[4], presence of any type 1 diabetes mellitus (T1DM) code, presence of any T2DM code, algorithm-based T1DM (defined as >50% of days with DM diagnosis codes in the [-365,-5] days prior to the index date being specific to T1DM)[5], algorithm-based T2DM (defined as >1 T2DM and no T1DM codes in the year prior to the index date), obesity, weight loss procedures, body mass index, hypertension, hyperlipidemia, ischemic heart disease, cerebrovascular disease, peripheral vascular disease, heart failure, obstructive sleep apnea, chronic kidney disease, dialysis, and smoking. We used International Classification of Diseases, Ninth Revision (ICD-9), Clinical Modification (-CM) diagnosis and ICD-9 Procedure Coding System (-PCS) procedure codes, ICD-10-CM diagnosis codes and ICD-10-PCS procedure codes, NDCs, Healthcare Common Procedure Coding System (HCPCS) codes, and Current Procedural Terminology, Fourth Edition (CPT-4) and Third Edition (CPT Category III) codes to define these conditions. These clinical characteristics were defined by the presence of a diagnosis code in any care setting and code position; procedure codes were additionally used to assess weight loss procedures, dialysis, and smoking, and NDCs were used to assess smoking cessation product use. Please see Appendix C for a list of diagnosis codes used to define baseline clinical characteristics in this request. Procedure and dispensing codes can be found in Appendices D and E, respectively.

We also assessed health service and drug utilization in the 365 days prior to the index date, including the number of health care encounters in each care setting; number of filled prescriptions, non-proprietary prescriptions, and unique drug classes; and the following diabetes medications using NDCs or HCPCS procedure codes: metformin, sulfonylureas, thiazolidinediones, long/intermediate acting insulins, short/rapid acting insulins, combination insulins, alpha-glucosidase inhibitors, meglitinides, DPP-4 inhibitors, SGLT-2 inhibitors, and other oral DM drugs (bromocriptine or colesevelam). Please see Appendix E for a list of non-proprietary and proprietary drug names and Appendix D for a list of procedure codes used to define baseline diabetes drug use.

Analysis: Continuous and categorical measures of cumulative exposure duration were provided on a per-individual and per-episode level for all 12 exposures of interest, as well as for the first index exposure episode only. Continuous measures of gap length (in days) were provided for all episodes across the 12 exposures of interest, as well as separately for first gaps and for second and subsequent treatment episode gaps. For SGLT-2 inhibitor, DPP-4 inhibitor, DPP-4 inhibitor/SGLT-2 inhibitor combination product, GLP-1 agonist, and GIP/GLP-1 agonist, exposure duration information was stratified by age group (<18, 18-24, 25-34, 35-44, 45-64, 65+ years), sex, and indication: obesity, T1DM, and T2DM.

Please refer to Appendices F, G, and H for the specifications of parameters used in this request and baseline characteristics, medical and drug utilization, stockpiling, and risk scores used in this request.

Overview for Request cder_mpl1p_wp107
Limitations: Assessment of cumulative exposure duration was limited to NDCs present in the outpatient pharmacy dispensing table although select Data Partners include NDCs in the procedure table; this approach was implemented since we expect most products to be used in an outpatient setting and days' supply information cannot be incorporated into exposure episode creation from codes present in the Sentinel Common Data Model procedure table. No exposure-specific procedure codes were identified during code list creation. Algorithms used to define exposures and inclusion criteria are imperfect; thus, it is possible that there may be misclassification. Therefore, data should be interpreted with this limitation in mind. **Notes:** Please contact the Sentinel Operations Center (info@sentinelsystem.org) for questions and to provide comments/suggestions for future enhancements to this document. For more information on Sentinel's routine querying modules, please refer to the documentation (https://dev.sentinelsystem.org/projects/SENTINEL/repos/sentinel-routine-querying-tool-documentation/browse).

[1]Only NDCs in the dispensing data were evaluated since days' supply was required to assess exposure duration; this information is not available when dispensed medications are included in the procedure table, which occurs at some Data Partners.

[2]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.

[3]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. J Gerontol A Biol Sci Med Sci. 2018;73(7)980-987.

[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.

[5]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97.

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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).

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

*all terms may not be used in this report

Table 1a. Aggregated Characteristics of DPP-4 Inhibitor Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitors initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	2,921,067	N/A[2]
Demographic Characteristics		
Age (years)	65.3	11.4
Age		
0-11 years	106	0.0%
12-17 years	1,041	0.0%
18-24 years	8,862	0.3%
25-34 years	54,450	1.9%
35-44 years	184,800	6.3%
45-54 years	422,527	14.5%
55-64 years	614,235	21.0%
65-74 years	909,546	31.1%
≥ 75 years		24.8%
Sex		
Female	1,539,902	52.7%
Male	1,381,165	47.3%
Race[3]		
American Indian or Alaska Native	21,266	0.7%
Asian	123,787	4.2%
Black or African American	367,072	12.6%
Multi-racial	8,638	0.3%
Native Hawaiian or Other Pacific Islander	7,778	0.3%
Unknown	773,327	26.5%
White	1,619,199	55.4%
Hispanic origin[3]		
Yes	203,633	7.0%
No	2,049,567	70.2%
Unknown	667,867	22.9%
Year		
2008	28,072	1.0%
2009	52,691	1.8%
2010	55,095	1.9%
2011	239,504	8.2%
2012	239,611	8.2%
2013	203,898	7.0%

Table 1a. Aggregated Characteristics of DPP-4 Inhibitor Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitors initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2014	216,728	7.4%
2015	235,961	8.1%
2016	245,057	8.4%
2017	280,007	9.6%
2018	261,559	9.0%
2019	240,070	8.2%
2020	205,732	7.0%
2021	205,129	7.0%
2022	104,829	3.6%
2023	96,423	3.3%
2024	10,701	0.4%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	2.1	2.1
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	1,006,411	34.5%
1	471,355	16.1%
2	453,180	15.5%
≥3	990,121	33.9%
Claims-Based frailty index[5]	0.2	0.1
Claims-Based frailty index categories		
<0.25 (not frail)	2,581,086	88.4%
≥0.25 (frail)	339,981	11.6%
Combined comorbidity score[6]	2.4	3.0
Combined comorbidity score categories		
<1	997,945	34.2%
1	501,625	17.2%
2	356,584	12.2%
≥3	1,064,913	36.5%
T1DM (>50% code days)[7]	17,813	0.6%
Any T1DM code	252,676	8.7%
Any T2DM code	2,792,256	95.6%
T2DM (and no T1DM codes)	2,542,947	87.1%
Obesity	852,961	29.2%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	13,969	0.5%

Table 1a. Aggregated Characteristics of DPP-4 Inhibitor Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitors initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Obesity only (no T1DM)	849,117	29.1%
T1DM and Obesity	3,844	0.1%
Neither T1DM nor Obesity	2,054,137	70.3%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	1,797,459	61.5%
Obesity only (no T2DM)	107,473	3.7%
T2DM and Obesity	745,488	25.5%
Neither T2DM nor obesity	270,647	9.3%
Weight loss procedures	9,003	0.3%
Body mass index (BMI) (kg/m^2)		
BMI <20	13,337	0.5%
BMI 20-24	53,966	1.8%
BMI 25-29	160,069	5.5%
BMI 30-39	331,487	11.3%
BMI 40-69	175,527	6.0%
BMI 70+	4,284	0.1%
Hypertension	2,439,093	83.5%
Hyperlipidemia	2,273,533	77.8%
Ischemic heart disease	826,022	28.3%
Cerebrovascular disease	232,831	8.0%
Peripheral vascular disease	521,805	17.9%
Heart failure	457,929	15.7%
Obstructive sleep apnea	349,364	12.0%
Chronic kidney disease	1,312,951	44.9%
Dialysis	61,885	2.1%
Smoking	570,773	19.5%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	1,977,254	67.7%
Prior use of sulfonylurea	1,191,221	40.8%
Prior use of thiazolidinedione	303,860	10.4%
Prior use of long/intermediate acting insulin	514,791	17.6%
Prior use of short/rapid acting insulin	273,911	9.4%
Prior use of combination insulin	80,434	2.8%
Prior use of alpha-glucosidase inhibitor	15,162	0.5%
Prior use of meglitinides	46,671	1.6%

Table 1a. Aggregated Characteristics of DPP-4 Inhibitor Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitors initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Prior use of DPP-4 inhibitors[8]	720	0.0%
Prior use of SGLT-2 inhibitors	184,706	6.3%
Prior use of bromocriptine or colesevelam	22,204	0.8%
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	21.3	24.4
Mean number of emergency room encounters	0.7	2.0
Mean number of inpatient hospital encounters	0.4	1.0
Mean number of non-acute institutional encounters	0.1	0.6
Mean number of other ambulatory encounters	10.2	26.1
Mean number of filled prescriptions	51.1	41.8
Mean number of generics dispensed	12.1	6.9
Mean number of unique drug classes dispensed	10.7	5.9

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

[5]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. J Gerontol A Biol Sci Med Sci. 2018;73(7)980-987.

[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

[8]Identified in the procedure table only.

Table 1b. Aggregated Characteristics of DPP-4/SGLT-2 Inhibitor Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	47,692	N/A[2]
Demographic Characteristics		
Age (years)	62.6	10.2
Age		
0-11 years	0	0.0%
12-17 years	*****	*****
18-24 years	*****	*****
25-34 years	912	1.9%
35-44 years	3,612	7.6%
45-54 years	8,482	17.8%
55-64 years	11,889	24.9%
65-74 years	14,851	31.1%
≥ 75 years		16.3%
Sex		
Female	21,858	45.8%
Male	25,834	54.2%
Race[3]		
American Indian or Alaska Native	151	0.3%
Asian	1,670	3.5%
Black or African American	5,444	11.4%
Multi-racial	322	0.7%
Native Hawaiian or Other Pacific Islander	150	0.3%
Unknown	14,905	31.3%
White	25,050	52.5%
Hispanic origin[3]		
Yes	2,666	5.6%
No	29,756	62.4%
Unknown	15,270	32.0%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	0	0.0%
2014	0	0.0%
2015	3,807	8.0%
2016	5,321	11.2%
2017	3,836	8.0%
2018	4,087	8.6%
2019	5,588	11.7%
2020	5,704	12.0%
2021	7,812	16.4%
2022	5,900	12.4%

Table 1b. Aggregated Characteristics of DPP-4/SGLT-2 Inhibitor Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2023	5,074	10.6%
2024	563	1.2%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	1.7	1.9
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	18,199	38.2%
1	8,845	18.5%
2	7,512	15.8%
≥3	13,136	27.5%
Claims-Based frailty index[5]	0.2	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	45,253	94.9%
≥0.25 (frail)	2,439	5.1%
Combined comorbidity score[6]	2.0	2.4
Combined comorbidity score categories		
<1	16,076	33.7%
1	9,956	20.9%
2	6,892	14.5%
≥3	14,768	31.0%
T1DM (>50% code days)[7]	209	0.4%
Any T1DM code	2,644	5.5%
Any T2DM code	46,426	97.3%
T2DM (and no T1DM codes)	43,824	91.9%
Obesity	18,596	39.0%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	161	0.3%
Obesity only (no T1DM)	18,548	38.9%
T1DM and Obesity	48	0.1%
Neither T1DM nor Obesity	28,935	60.7%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	26,640	55.9%
Obesity only (no T2DM)	1,412	3.0%
T2DM and Obesity	17,184	36.0%
Neither T2DM nor obesity	2,456	5.1%
Weight loss procedures	63	0.1%
Body mass index (BMI) (kg/m^2)		
BMI <20	199	0.4%
BMI 20-24	1,608	3.4%
BMI 25-29	4,793	10.0%
BMI 30-39	9,688	20.3%
BMI 40-69	3,964	8.3%
BMI 70+	70	0.1%
Hypertension	39,676	83.2%

Table 1b. Aggregated Characteristics of DPP-4/SGLT-2 Inhibitor Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Hyperlipidemia	39,321	82.4%
Ischemic heart disease	11,561	24.2%
Cerebrovascular disease	2,485	5.2%
Peripheral vascular disease	7,524	15.8%
Heart failure	5,052	10.6%
Obstructive sleep apnea	6,886	14.4%
Chronic kidney disease	29,080	61.0%
Dialysis	285	0.6%
Smoking	9,014	18.9%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	34,617	72.6%
Prior use of sulfonylurea	18,108	38.0%
Prior use of thiazolidinedione	5,028	10.5%
Prior use of long/intermediate acting insulin	10,797	22.6%
Prior use of short/rapid acting insulin	4,770	10.0%
Prior use of combination insulin	1,198	2.5%
Prior use of alpha-glucosidase inhibitor	309	0.6%
Prior use of meglitinides	730	1.5%
Prior use of DPP-4 inhibitors	16,131	33.8%
Prior use of SGLT-2 inhibitors	15,201	31.9%
Prior use of bromocriptine or colesevelam	382	0.8%

Table 1b. Aggregated Characteristics of DPP-4/SGLT-2 Inhibitor Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	18.6	17.8
Mean number of emergency room encounters	0.6	1.7
Mean number of inpatient hospital encounters	0.2	0.6
Mean number of non-acute institutional encounters	0.0	0.3
Mean number of other ambulatory encounters	6.3	21.0
Mean number of filled prescriptions	46.5	36.5
Mean number of generics dispensed	12.2	6.7
Mean number of unique drug classes dispensed	10.4	5.6

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

[5]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. J Gerontol A Biol Sci Med Sci. 2018;73(7)980-987.

[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

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

Table 1c. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	374,607	N/A[2]
Demographic Characteristics		
Age (years)	58.3	10.8
Age		
0-11 years	*****	*****
12-17 years	*****	*****
18-24 years	2,919	0.8%
25-34 years	14,899	4.0%
35-44 years	45,355	12.1%
45-54 years	84,786	22.6%
55-64 years	94,145	25.1%
65-74 years	98,305	26.2%
≥ 75 years		9.1%
Sex		
Female	232,247	62.0%
Male	142,360	38.0%
Race[3]		
American Indian or Alaska Native	1,102	0.3%
Asian	4,842	1.3%
Black or African American	32,084	8.6%
Multi-racial	5,638	1.5%
Native Hawaiian or Other Pacific Islander	508	0.1%
Unknown	119,255	31.8%
White	211,178	56.4%
Hispanic origin[3]		
Yes	12,254	3.3%
No	216,624	57.8%
Unknown	145,729	38.9%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	0	0.0%
2014	0	0.0%
2015	0	0.0%
2016	0	0.0%
2017	0	0.0%
2018	0	0.0%
2019	0	0.0%
2020	0	0.0%
2021	0	0.0%

Table 1c. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2022	60,468	16.1%
2023	247,864	66.2%
2024	66,275	17.7%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	1.4	1.8
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	180,381	48.2%
1	60,733	16.2%
2	50,552	13.5%
≥3	82,941	22.1%
Claims-Based frailty index[5]	0.2	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	355,334	94.9%
≥0.25 (frail)	19,273	5.1%
Combined comorbidity score[6]	1.9	2.3
Combined comorbidity score categories		
<1	129,845	34.7%
1	81,213	21.7%
2	53,445	14.3%
≥3	110,104	29.4%
T1DM (>50% code days)[7]	2,733	0.7%
Any T1DM code	12,668	3.4%
Any T2DM code	281,659	75.2%
T2DM (and no T1DM codes)	269,915	72.1%
Obesity	255,619	68.2%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	1,082	0.3%
Obesity only (no T1DM)	253,968	67.8%
T1DM and Obesity	1,651	0.4%
Neither T1DM nor Obesity	117,906	31.5%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	85,599	22.9%
Obesity only (no T2DM)	71,303	19.0%
T2DM and Obesity	184,316	49.2%
Neither T2DM nor obesity	33,389	8.9%
Weight loss procedures	728	0.2%
Body mass index (BMI) (kg/m^2)		
BMI <20	923	0.2%
BMI 20-24	3,703	1.0%
BMI 25-29	24,738	6.6%
BMI 30-39	121,299	32.4%
BMI 40-69	91,881	24.5%
BMI 70+	1,830	0.5%

Table 1c. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Hypertension	278,056	74.2%
Hyperlipidemia	280,859	75.0%
Ischemic heart disease	72,606	19.4%
Cerebrovascular disease	13,244	3.5%
Peripheral vascular disease	45,481	12.1%
Heart failure	37,173	9.9%
Obstructive sleep apnea	102,912	27.5%
Chronic kidney disease	175,489	46.8%
Dialysis	3,724	1.0%
Smoking	71,008	19.0%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	194,260	51.9%
Prior use of sulfonylurea	59,751	16.0%
Prior use of thiazolidinedione	19,792	5.3%
Prior use of long/intermediate acting insulin	80,276	21.4%
Prior use of short/rapid acting insulin	48,001	12.8%
Prior use of combination insulin	5,306	1.4%
Prior use of alpha-glucosidase inhibitor	921	0.2%
Prior use of meglitinides	2,488	0.7%
Prior use of DPP-4 inhibitors	25,329	6.8%
Prior use of SGLT-2 inhibitors	89,463	23.9%
Prior use of bromocriptine or colesevelam	1,376	0.4%

Table 1c. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	21.2	19.8
Mean number of emergency room encounters	0.5	1.5
Mean number of inpatient hospital encounters	0.1	0.5
Mean number of non-acute institutional encounters	0.0	0.2
Mean number of other ambulatory encounters	5.3	9.4
Mean number of filled prescriptions	45.6	36.0
Mean number of generics dispensed	12.9	7.0
Mean number of unique drug classes dispensed	11.3	6.0

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

[5]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. J Gerontol A Biol Sci Med Sci. 2018;73(7)980-987.

[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

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Table 1d. Aggregated Characteristics of GLP-1 Agonist Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	3,321,029	N/A[2]
Demographic Characteristics		
Age (years)	59.4	11.4
Age		
0-11 years	597	0.0%
12-17 years	9,443	0.3%
18-24 years	30,428	0.9%
25-34 years	135,542	4.1%
35-44 years	364,861	11.0%
45-54 years	651,776	19.6%
55-64 years	781,639	23.5%
65-74 years	973,014	29.3%
≥ 75 years		11.3%
Sex		
Female	1,939,253	58.4%
Male	1,381,776	41.6%
Race[3]		
American Indian or Alaska Native	25,460	0.8%
Asian	68,320	2.1%
Black or African American	372,445	11.2%
Multi-racial	24,546	0.7%
Native Hawaiian or Other Pacific Islander	7,453	0.2%
Unknown	918,566	27.7%
White	1,904,239	57.3%
Hispanic origin[3]		
Yes	185,655	5.6%
No	2,196,232	66.1%
Unknown	939,142	28.3%
Year		
2008	5,977	0.2%
2009	10,326	0.3%
2010	41,056	1.2%
2011	54,678	1.6%
2012	59,980	1.8%
2013	67,075	2.0%
2014	71,895	2.2%
2015	101,630	3.1%
2016	137,794	4.1%
2017	193,064	5.8%
2018	247,074	7.4%
2019	298,988	9.0%
2020	311,262	9.4%
2021	492,253	14.8%
2022	454,860	13.7%

Table 1d. Aggregated Characteristics of GLP-1 Agonist Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2023	708,211	21.3%
2024	64,906	2.0%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	1.7	1.9
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	1,389,322	41.8%
1	553,264	16.7%
2	478,031	14.4%
≥3	900,412	27.1%
Claims-Based frailty index[5]	0.2	0.1
Claims-Based frailty index categories		
<0.25 (not frail)	3,099,251	93.3%
≥0.25 (frail)	221,778	6.7%
Combined comorbidity score[6]	2.0	2.5
Combined comorbidity score categories		
<1	1,108,919	33.4%
1	688,139	20.7%
2	468,735	14.1%
≥3	1,055,236	31.8%
T1DM (>50% code days)[7]	30,627	0.9%
Any T1DM code	227,521	6.9%
Any T2DM code	2,754,741	82.9%
T2DM (and no T1DM codes)	2,535,797	76.4%
Obesity	1,770,426	53.3%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	17,283	0.5%
Obesity only (no T1DM)	1,757,082	52.9%
T1DM and Obesity	13,344	0.4%
Neither T1DM nor Obesity	1,533,320	46.2%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	1,251,459	37.7%
Obesity only (no T2DM)	486,088	14.6%
T2DM and Obesity	1,284,338	38.7%
Neither T2DM nor obesity	299,144	9.0%
Weight loss procedures	5,094	0.2%
Body mass index (BMI) (kg/m^2)		
BMI <20	7,954	0.2%
BMI 20-24	38,434	1.2%
BMI 25-29	187,899	5.7%
BMI 30-39	741,889	22.3%
BMI 40-69	537,945	16.2%
BMI 70+	12,387	0.4%
Hypertension	2,559,811	77.1%

Table 1d. Aggregated Characteristics of GLP-1 Agonist Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Hyperlipidemia	2,433,665	73.3%
Ischemic heart disease	732,937	22.1%
Cerebrovascular disease	162,071	4.9%
Peripheral vascular disease	452,818	13.6%
Heart failure	389,916	11.7%
Obstructive sleep apnea	710,488	21.4%
Chronic kidney disease	1,642,748	49.5%
Dialysis	43,087	1.3%
Smoking	691,626	20.8%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	2,092,747	63.0%
Prior use of sulfonylurea	970,885	29.2%
Prior use of thiazolidinedione	250,349	7.5%
Prior use of long/intermediate acting insulin	934,976	28.2%
Prior use of short/rapid acting insulin	535,653	16.1%
Prior use of combination insulin	102,919	3.1%
Prior use of alpha-glucosidase inhibitor	15,165	0.5%
Prior use of meglitinides	38,422	1.2%
Prior use of DPP-4 inhibitors	654,472	19.7%
Prior use of SGLT-2 inhibitors	530,962	16.0%
Prior use of bromocriptine or colesevelam	19,054	0.6%

Table 1d. Aggregated Characteristics of GLP-1 Agonist Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	21.6	22.0
Mean number of emergency room encounters	0.7	1.8
Mean number of inpatient hospital encounters	0.2	0.7
Mean number of non-acute institutional encounters	0.0	0.3
Mean number of other ambulatory encounters	8.3	23.8
Mean number of filled prescriptions	49.9	41.3
Mean number of generics dispensed	12.6	6.9
Mean number of unique drug classes dispensed	11.0	5.9

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

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Table 1e. Aggregated Characteristics of SGLT-2 Inhibitor Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	2,842,393	N/A[2]
Demographic Characteristics		
Age (years)	64.5	10.8
Age		
0-11 years	83	0.0%
12-17 years	954	0.0%
18-24 years	9,331	0.3%
25-34 years	53,561	1.9%
35-44 years	185,470	6.5%
45-54 years	422,529	14.9%
55-64 years	631,257	22.2%
65-74 years	924,497	32.5%
≥ 75 years		21.6%
Sex		
Female	1,322,334	46.5%
Male	1,520,059	53.5%
Race[3]		
American Indian or Alaska Native	18,930	0.7%
Asian	110,527	3.9%
Black or African American	322,803	11.4%
Multi-racial	12,418	0.4%
Native Hawaiian or Other Pacific Islander	8,920	0.3%
Unknown	692,225	24.4%
White	1,676,570	59.0%
Hispanic origin[3]		
Yes	178,652	6.3%
No	2,001,133	70.4%
Unknown	662,608	23.3%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	19,876	0.7%
2014	96,952	3.4%
2015	150,328	5.3%
2016	146,554	5.2%
2017	188,311	6.6%
2018	188,123	6.6%
2019	252,966	8.9%
2020	298,340	10.5%
2021	462,380	16.3%
2022	432,647	15.2%

Table 1e. Aggregated Characteristics of SGLT-2 Inhibitor Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2023	549,599	19.3%
2024	56,317	2.0%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	2.2	2.1
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	867,187	30.5%
1	451,487	15.9%
2	506,198	17.8%
≥3	1,017,521	35.8%
Claims-Based frailty index[5]	0.2	0.1
Claims-Based frailty index categories		
<0.25 (not frail)	2,608,794	91.8%
≥0.25 (frail)	233,599	8.2%
Combined comorbidity score[6]	2.8	3.0
Combined comorbidity score categories		
<1	763,921	26.9%
1	493,545	17.4%
2	379,905	13.4%
≥3	1,205,022	42.4%
T1DM (>50% code days)[7]	18,482	0.7%
Any T1DM code	161,265	5.7%
Any T2DM code	2,535,719	89.2%
T2DM (and no T1DM codes)	2,378,768	83.7%
Obesity	1,167,881	41.1%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	12,460	0.4%
Obesity only (no T1DM)	1,161,859	40.9%
T1DM and Obesity	6,022	0.2%
Neither T1DM nor Obesity	1,662,052	58.5%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	1,385,050	48.7%
Obesity only (no T2DM)	174,163	6.1%
T2DM and Obesity	993,718	35.0%
Neither T2DM nor obesity	289,462	10.2%
Weight loss procedures	4,308	0.2%
Body mass index (BMI) (kg/m^2)		
BMI <20	18,416	0.6%
BMI 20-24	81,999	2.9%
BMI 25-29	241,812	8.5%
BMI 30-39	567,872	20.0%
BMI 40-69	292,690	10.3%
BMI 70+	6,108	0.2%
Hypertension	2,398,967	84.4%
Hyperlipidemia	2,272,223	79.9%

Table 1e. Aggregated Characteristics of SGLT-2 Inhibitor Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Ischemic heart disease	932,956	32.8%
Cerebrovascular disease	187,273	6.6%
Peripheral vascular disease	518,439	18.2%
Heart failure	654,936	23.0%
Obstructive sleep apnea	535,784	18.8%
Chronic kidney disease	1,652,752	58.1%
Dialysis	35,851	1.3%
Smoking	701,370	24.7%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	1,889,776	66.5%
Prior use of sulfonylurea	919,190	32.3%
Prior use of thiazolidinedione	208,628	7.3%
Prior use of long/intermediate acting insulin	704,314	24.8%
Prior use of short/rapid acting insulin	378,594	13.3%
Prior use of combination insulin	75,465	2.7%
Prior use of alpha-glucosidase inhibitor	13,866	0.5%
Prior use of meglitinides	34,615	1.2%
Prior use of DPP-4 inhibitors	621,014	21.8%
Prior use of SGLT-2 inhibitors[8]	425	0.0%
Prior use of bromocriptine or colesevelam	17,175	0.6%

Table 1e. Aggregated Characteristics of SGLT-2 Inhibitor Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	21.2	19.3
Mean number of emergency room encounters	0.7	1.9
Mean number of inpatient hospital encounters	0.3	0.9
Mean number of non-acute institutional encounters	0.1	0.4
Mean number of other ambulatory encounters	8.9	24.1
Mean number of filled prescriptions	49.5	39.5
Mean number of generics dispensed	12.5	6.7
Mean number of unique drug classes dispensed	11.0	5.8

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

[5]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. J Gerontol A Biol Sci Med Sci. 2018;73(7)980-987.

[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

[8]Identified in the procedure table only.

Table 1f. Aggregated Characteristics of Canagliflozin Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Canagliflozin initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	501,332	N/A[2]
Demographic Characteristics		
Age (years)	61.2	10.6
Age		
0-11 years	*****	*****
12-17 years	*****	*****
18-24 years	1,823	0.4%
25-34 years	11,673	2.3%
35-44 years	43,004	8.6%
45-54 years	98,006	19.5%
55-64 years	127,894	25.5%
65-74 years	155,267	31.0%
≥ 75 years		12.6%
Sex		
Female	244,704	48.8%
Male	256,628	51.2%
Race[3]		
American Indian or Alaska Native	2,837	0.6%
Asian	16,567	3.3%
Black or African American	48,079	9.6%
Multi-racial	2,197	0.4%
Native Hawaiian or Other Pacific Islander	1,473	0.3%
Unknown	153,013	30.5%
White	277,166	55.3%
Hispanic origin[3]		
Yes	29,145	5.8%
No	329,549	65.7%
Unknown	142,638	28.5%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	19,876	4.0%
2014	73,770	14.7%
2015	112,998	22.5%
2016	91,242	18.2%
2017	72,051	14.4%
2018	44,261	8.8%
2019	24,064	4.8%
2020	27,662	5.5%
2021	21,304	4.2%
2022	8,141	1.6%

Table 1f. Aggregated Characteristics of Canagliflozin Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Canagliflozin initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2023	5,466	1.1%
2024	497	0.1%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	1.6	1.8
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	193,440	38.6%
1	98,858	19.7%
2	77,790	15.5%
≥3	131,244	26.2%
Claims-Based frailty index[5]	0.2	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	471,878	94.1%
≥0.25 (frail)	29,454	5.9%
Combined comorbidity score[6]	1.6	2.3
Combined comorbidity score categories		
<1	199,935	39.9%
1	102,184	20.4%
2	67,071	13.4%
≥3	132,142	26.4%
T1DM (>50% code days)[7]	5,463	1.1%
Any T1DM code	50,505	10.1%
Any T2DM code	485,797	96.9%
T2DM (and no T1DM codes)	436,500	87.1%
Obesity	184,959	36.9%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	3,980	0.8%
Obesity only (no T1DM)	183,476	36.6%
T1DM and Obesity	1,483	0.3%
Neither T1DM nor Obesity	312,393	62.3%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	276,651	55.2%
Obesity only (no T2DM)	25,110	5.0%
T2DM and Obesity	159,849	31.9%
Neither T2DM nor obesity	39,722	7.9%
Weight loss procedures	765	0.2%
Body mass index (BMI) (kg/m^2)		
BMI <20	802	0.2%
BMI 20-24	4,992	1.0%
BMI 25-29	22,790	4.5%
BMI 30-39	64,113	12.8%
BMI 40-69	39,616	7.9%
BMI 70+	830	0.2%
Hypertension	413,231	82.4%

Table 1f. Aggregated Characteristics of Canagliflozin Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Canagliflozin initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Hyperlipidemia	399,977	79.8%
Ischemic heart disease	116,408	23.2%
Cerebrovascular disease	24,150	4.8%
Peripheral vascular disease	66,246	13.2%
Heart failure	49,705	9.9%
Obstructive sleep apnea	77,301	15.4%
Chronic kidney disease	213,932	42.7%
Dialysis	2,624	0.5%
Smoking	91,442	18.2%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	385,422	76.9%
Prior use of sulfonylurea	215,706	43.0%
Prior use of thiazolidinedione	52,321	10.4%
Prior use of long/intermediate acting insulin	146,475	29.2%
Prior use of short/rapid acting insulin	79,133	15.8%
Prior use of combination insulin	19,987	4.0%
Prior use of alpha-glucosidase inhibitor	4,144	0.8%
Prior use of meglitinides	9,258	1.8%
Prior use of DPP-4 inhibitors	169,214	33.8%
Prior use of SGLT-2 inhibitors	30,630	6.1%
Prior use of bromocriptine or colesevelam	7,262	1.4%

Table 1f. Aggregated Characteristics of Canagliflozin Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Canagliflozin initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	19.5	17.8
Mean number of emergency room encounters	0.7	1.8
Mean number of inpatient hospital encounters	0.2	0.6
Mean number of non-acute institutional encounters	0.0	0.3
Mean number of other ambulatory encounters	7.1	23.1
Mean number of filled prescriptions	55.2	43.1
Mean number of generics dispensed	12.8	7.0
Mean number of unique drug classes dispensed	10.9	5.9

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

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[5]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. J Gerontol A Biol Sci Med Sci. 2018;73(7)980-987.

[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

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Table 1g. Aggregated Characteristics of Saxenda Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Saxenda initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	84,064	N/A[2]
Demographic Characteristics		
Age (years)	45.3	11.0
Age		
0-11 years	*****	*****
12-17 years	814	1.0%
18-24 years	2,937	3.5%
25-34 years	11,770	14.0%
35-44 years	24,060	28.6%
45-54 years	27,233	32.4%
55-64 years	15,452	18.4%
65-74 years	1,669	2.0%
≥ 75 years		*****
Sex		
Female	69,139	82.2%
Male	14,925	17.8%
Race[3]		
American Indian or Alaska Native	256	0.3%
Asian	642	0.8%
Black or African American	6,757	8.0%
Multi-racial	1,283	1.5%
Native Hawaiian or Other Pacific Islander	29	0.0%
Unknown	36,252	43.1%
White	38,845	46.2%
Hispanic origin[3]		
Yes	3,887	4.6%
No	40,254	47.9%
Unknown	39,923	47.5%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	0	0.0%
2014	0	0.0%
2015	1,512	1.8%
2016	3,452	4.1%
2017	5,463	6.5%
2018	7,030	8.4%
2019	8,549	10.2%
2020	8,000	9.5%
2021	12,057	14.3%
2022	21,023	25.0%

Table 1g. Aggregated Characteristics of Saxenda Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Saxenda initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2023	16,287	19.4%
2024	691	0.8%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	0.3	0.8
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	70,483	83.8%
1	6,693	8.0%
2	4,825	5.7%
≥3	2,063	2.5%
Claims-Based frailty index[5]	0.1	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	83,333	99.1%
≥0.25 (frail)	731	0.9%
Combined comorbidity score[6]	0.6	1.3
Combined comorbidity score categories		
<1	47,094	56.0%
1	21,762	25.9%
2	8,794	10.5%
≥3	6,414	7.6%
T1DM (>50% code days)[7]	483	0.6%
Any T1DM code	794	0.9%
Any T2DM code	9,811	11.7%
T2DM (and no T1DM codes)	9,269	11.0%
Obesity	65,315	77.7%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	119	0.1%
Obesity only (no T1DM)	64,951	77.3%
T1DM and Obesity	364	0.4%
Neither T1DM nor Obesity	18,630	22.2%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	1,793	2.1%
Obesity only (no T2DM)	57,839	68.8%
T2DM and Obesity	7,476	8.9%
Neither T2DM nor obesity	16,956	20.2%
Weight loss procedures	316	0.4%
Body mass index (BMI) (kg/m^2)		
BMI <20	183	0.2%
BMI 20-24	291	0.3%
BMI 25-29	4,447	5.3%
BMI 30-39	27,955	33.3%
BMI 40-69	20,943	24.9%
BMI 70+	386	0.5%

Table 1g. Aggregated Characteristics of Saxenda Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Saxenda initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Hypertension	34,983	41.6%
Hyperlipidemia	32,238	38.3%
Ischemic heart disease	3,061	3.6%
Cerebrovascular disease	827	1.0%
Peripheral vascular disease	1,132	1.3%
Heart failure	1,415	1.7%
Obstructive sleep apnea	14,581	17.3%
Chronic kidney disease	5,912	7.0%
Dialysis	236	0.3%
Smoking	9,327	11.1%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	13,097	15.6%
Prior use of sulfonylurea	1,110	1.3%
Prior use of thiazolidinedione	424	0.5%
Prior use of long/intermediate acting insulin	1,522	1.8%
Prior use of short/rapid acting insulin	1,241	1.5%
Prior use of combination insulin	87	0.1%
Prior use of alpha-glucosidase inhibitor	63	0.1%
Prior use of meglitinides	45	0.1%
Prior use of DPP-4 inhibitors	832	1.0%
Prior use of SGLT-2 inhibitors	1,525	1.8%
Prior use of bromocriptine or colesevelam	199	0.2%

Table 1g. Aggregated Characteristics of Saxenda Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Saxenda initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	16.9	16.4
Mean number of emergency room encounters	0.4	1.1
Mean number of inpatient hospital encounters	0.1	0.4
Mean number of non-acute institutional encounters	0.0	0.1
Mean number of other ambulatory encounters	4.9	12.8
Mean number of filled prescriptions	28.2	27.3
Mean number of generics dispensed	9.4	6.4
Mean number of unique drug classes dispensed	8.6	5.6

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

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Table 1h. Aggregated Characteristics of Ozempic Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Ozempic initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	1,364,127	N/A[2]
Demographic Characteristics		
Age (years)	60.9	10.9
Age		
0-11 years	50	0.0%
12-17 years	1,170	0.1%
18-24 years	9,316	0.7%
25-34 years	43,863	3.2%
35-44 years	127,636	9.4%
45-54 years	245,098	18.0%
55-64 years	313,920	23.0%
65-74 years	456,990	33.5%
≥ 75 years		12.2%
Sex		
Female	807,292	59.2%
Male	556,835	40.8%
Race[3]		
American Indian or Alaska Native	11,989	0.9%
Asian	25,418	1.9%
Black or African American	141,779	10.4%
Multi-racial	12,820	0.9%
Native Hawaiian or Other Pacific Islander	2,689	0.2%
Unknown	336,757	24.7%
White	832,675	61.0%
Hispanic origin[3]		
Yes	63,528	4.7%
No	914,051	67.0%
Unknown	386,548	28.3%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	0	0.0%
2014	0	0.0%
2015	0	0.0%
2016	0	0.0%
2017	0	0.0%
2018	29,535	2.2%
2019	122,263	9.0%
2020	136,318	10.0%
2021	217,963	16.0%

Table 1h. Aggregated Characteristics of Ozempic Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Ozempic initiators	
Patient Characteristics	Number/Mean	Percent/ Standard Deviation[1]
2022	288,532	21.2%
2023	517,901	38.0%
2024	51,615	3.8%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	1.7	1.9
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	551,721	40.4%
1	230,343	16.9%
2	204,852	15.0%
≥3	377,211	27.7%
Claims-Based frailty index[5]	0.2	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	1,279,132	93.8%
≥0.25 (frail)	84,995	6.2%
Combined comorbidity score[6]	2.2	2.5
Combined comorbidity score categories		
<1	411,337	30.2%
1	282,187	20.7%
2	200,886	14.7%
≥3	469,717	34.4%
T1DM (>50% code days)[7]	11,652	0.9%
Any T1DM code	63,112	4.6%
Any T2DM code	1,121,458	82.2%
T2DM (and no T1DM codes)	1,062,145	77.9%
Obesity	834,297	61.2%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	5,496	0.4%
Obesity only (no T1DM)	828,141	60.7%
T1DM and Obesity	6,156	0.5%
Neither T1DM nor Obesity	524,334	38.4%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	424,057	31.1%
Obesity only (no T2DM)	196,209	14.4%
T2DM and Obesity	638,088	46.8%
Neither T2DM nor obesity	105,773	7.8%
Weight loss procedures	2,263	0.2%
Body mass index (BMI) (kg/m^2)		
BMI <20	3,338	0.2%
BMI 20-24	15,818	1.2%
BMI 25-29	89,101	6.5%
BMI 30-39	390,453	28.6%
BMI 40-69	281,538	20.6%

Table 1h. Aggregated Characteristics of Ozempic Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Ozempic initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
BMI 70+	6,218	0.5%
Hypertension	1,076,420	78.9%
Hyperlipidemia	1,048,919	76.9%
Ischemic heart disease	316,041	23.2%
Cerebrovascular disease	64,202	4.7%
Peripheral vascular disease	197,301	14.5%
Heart failure	168,836	12.4%
Obstructive sleep apnea	350,951	25.7%
Chronic kidney disease	724,593	53.1%
Dialysis	19,032	1.4%
Smoking	301,195	22.1%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	827,003	60.6%
Prior use of sulfonylurea	311,230	22.8%
Prior use of thiazolidinedione	83,696	6.1%
Prior use of long/intermediate acting insulin	367,212	26.9%
Prior use of short/rapid acting insulin	207,235	15.2%
Prior use of combination insulin	30,033	2.2%
Prior use of alpha-glucosidase inhibitor	4,572	0.3%
Prior use of meglitinides	12,497	0.9%
Prior use of DPP-4 inhibitors	178,751	13.1%
Prior use of SGLT-2 inhibitors	293,958	21.5%
Prior use of bromocriptine or colesevelam	5,290	0.4%

Table 1h. Aggregated Characteristics of Ozempic Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Ozempic initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	22.7	22.3
Mean number of emergency room encounters	0.6	1.6
Mean number of inpatient hospital encounters	0.2	0.6
Mean number of non-acute institutional encounters	0.0	0.3
Mean number of other ambulatory encounters	7.2	17.9
Mean number of filled prescriptions	48.2	39.0
Mean number of generics dispensed	12.9	6.9
Mean number of unique drug classes dispensed	11.3	5.9

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

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[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

Table 1i. Aggregated Characteristics of Wegovy Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Wegovy initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	163,331	N/A[2]
Demographic Characteristics		
Age (years)	46.4	11.0
Age		
0-11 years	11	0.0%
12-17 years	840	0.5%
18-24 years	5,069	3.1%
25-34 years	20,374	12.5%
35-44 years	44,851	27.5%
45-54 years	54,173	33.2%
55-64 years	33,123	20.3%
65-74 years	4,479	2.7%
≥ 75 years		0.3%
Sex		
Female	128,006	78.4%
Male	35,325	21.6%
Race[3]		
American Indian or Alaska Native	420	0.3%
Asian	1,903	1.2%
Black or African American	12,496	7.7%
Multi-racial	3,995	2.4%
Native Hawaiian or Other Pacific Islander	45	0.0%
Unknown	68,087	41.7%
White	76,385	46.8%
Hispanic origin[3]		
Yes	5,856	3.6%
No	72,594	44.4%
Unknown	84,881	52.0%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	0	0.0%
2014	0	0.0%
2015	0	0.0%
2016	0	0.0%
2017	0	0.0%
2018	0	0.0%
2019	0	0.0%
2020	0	0.0%
2021	10,703	6.6%
2022	17,824	10.9%

Table 1i. Aggregated Characteristics of Wegovy Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Wegovy initiators	
Patient Characteristics	Number/Mean	Percent/ Standard Deviation[1]
2023	118,785	72.7%
2024	16,019	9.8%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	0.3	0.7
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	138,742	84.9%
1	12,092	7.4%
2	9,103	5.6%
≥3	3,394	2.1%
Claims-Based frailty index[5]	0.1	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	162,461	99.5%
≥0.25 (frail)	870	0.5%
Combined comorbidity score[6]	0.5	1.3
Combined comorbidity score categories		
<1	95,954	58.7%
1	40,881	25.0%
2	15,826	9.7%
≥3	10,670	6.5%
T1DM (>50% code days)[7]	889	0.5%
Any T1DM code	1,083	0.7%
Any T2DM code	11,822	7.2%
T2DM (and no T1DM codes)	11,272	6.9%
Obesity	128,394	78.6%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	222	0.1%
Obesity only (no T1DM)	127,727	78.2%
T1DM and Obesity	667	0.4%
Neither T1DM nor Obesity	34,715	21.3%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	1,782	1.1%
Obesity only (no T2DM)	118,904	72.8%
T2DM and Obesity	9,490	5.8%
Neither T2DM nor obesity	33,155	20.3%
Weight loss procedures	480	0.3%
Body mass index (BMI) (kg/m^2)		
BMI <20	547	0.3%
BMI 20-24	799	0.5%
BMI 25-29	10,714	6.6%
BMI 30-39	62,781	38.4%
BMI 40-69	40,697	24.9%
BMI 70+	527	0.3%
Hypertension	66,575	40.8%

Table 1i. Aggregated Characteristics of Wegovy Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Wegovy initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Hyperlipidemia	68,257	41.8%
Ischemic heart disease	6,425	3.9%
Cerebrovascular disease	1,388	0.8%
Peripheral vascular disease	2,030	1.2%
Heart failure	2,443	1.5%
Obstructive sleep apnea	27,867	17.1%
Chronic kidney disease	9,243	5.7%
Dialysis	319	0.2%
Smoking	15,422	9.4%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	18,460	11.3%
Prior use of sulfonylurea	690	0.4%
Prior use of thiazolidinedione	254	0.2%
Prior use of long/intermediate acting insulin	1,247	0.8%
Prior use of short/rapid acting insulin	1,381	0.8%
Prior use of combination insulin	51	0.0%
Prior use of alpha-glucosidase inhibitor	79	0.0%
Prior use of meglitinides	16	0.0%
Prior use of DPP-4 inhibitors	372	0.2%
Prior use of SGLT-2 inhibitors	1,682	1.0%
Prior use of bromocriptine or colesevelam	337	0.2%

Table 1i. Aggregated Characteristics of Wegovy Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Wegovy initiators	
Patient Characteristics	Number/Mean	Percent/ Standard Deviation[1]
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	15.7	15.3
Mean number of emergency room encounters	0.3	0.8
Mean number of inpatient hospital encounters	0.1	0.3
Mean number of non-acute institutional encounters	0.0	0.1
Mean number of other ambulatory encounters	3.9	6.6
Mean number of filled prescriptions	24.4	22.8
Mean number of generics dispensed	8.6	5.9
Mean number of unique drug classes dispensed	7.9	5.2

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

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Table 1i. Aggregated Characteristics of Wegovy Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Rybelsus initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	277,037	N/A[2]
Demographic Characteristics		
Age (years)	63.4	10.8
Age		
0-11 years	*****	*****
12-17 years	*****	*****
18-24 years	1,304	0.5%
25-34 years	6,185	2.2%
35-44 years	19,378	7.0%
45-54 years	42,423	15.3%
55-64 years	62,293	22.5%
65-74 years	96,417	34.8%
≥ 75 years		17.7%
Sex		
Female	150,612	54.4%
Male	126,425	45.6%
Race[3]		
American Indian or Alaska Native	1,004	0.4%
Asian	10,447	3.8%
Black or African American	30,745	11.1%
Multi-racial	2,098	0.8%
Native Hawaiian or Other Pacific Islander	710	0.3%
Unknown	73,293	26.5%
White	158,740	57.3%
Hispanic origin[3]		
Yes	14,194	5.1%
No	182,358	65.8%
Unknown	80,485	29.1%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	0	0.0%
2014	0	0.0%
2015	0	0.0%
2016	0	0.0%
2017	0	0.0%
2018	0	0.0%
2019	791	0.3%
2020	28,179	10.2%
2021	72,179	26.1%

Table 1i. Aggregated Characteristics of Wegovy Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Rybelsus initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2022	73,434	26.5%
2023	93,506	33.8%
2024	8,948	3.2%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	1.6	1.9
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	112,575	40.6%
1	49,235	17.8%
2	42,931	15.5%
≥3	72,296	26.1%
Claims-Based frailty index[5]	0.2	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	263,371	95.1%
≥0.25 (frail)	13,666	4.9%
Combined comorbidity score[6]	2.1	2.5
Combined comorbidity score categories		
<1	87,813	31.7%
1	57,442	20.7%
2	40,608	14.7%
≥3	91,174	32.9%
T1DM (>50% code days)[7]	882	0.3%
Any T1DM code	7,670	2.8%
Any T2DM code	247,663	89.4%
T2DM (and no T1DM codes)	240,250	86.7%
Obesity	142,933	51.6%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	428	0.2%
Obesity only (no T1DM)	142,479	51.4%
T1DM and Obesity	454	0.2%
Neither T1DM nor Obesity	133,676	48.3%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	119,084	43.0%
Obesity only (no T2DM)	21,767	7.9%
T2DM and Obesity	121,166	43.7%
Neither T2DM nor obesity	15,020	5.4%
Weight loss procedures	211	0.1%
Body mass index (BMI) (kg/m^2)		
BMI <20	933	0.3%
BMI 20-24	6,605	2.4%
BMI 25-29	25,109	9.1%
BMI 30-39	72,750	26.3%
BMI 40-69	40,924	14.8%
BMI 70+	764	0.3%

Table 1i. Aggregated Characteristics of Wegovy Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Rybelsus initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Hypertension	225,142	81.3%
Hyperlipidemia	222,761	80.4%
Ischemic heart disease	60,657	21.9%
Cerebrovascular disease	12,849	4.6%
Peripheral vascular disease	40,824	14.7%
Heart failure	30,556	11.0%
Obstructive sleep apnea	54,731	19.8%
Chronic kidney disease	154,936	55.9%
Dialysis	2,613	0.9%
Smoking	54,387	19.6%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	190,304	68.7%
Prior use of sulfonylurea	85,835	31.0%
Prior use of thiazolidinedione	22,837	8.2%
Prior use of long/intermediate acting insulin	44,489	16.1%
Prior use of short/rapid acting insulin	21,279	7.7%
Prior use of combination insulin	3,875	1.4%
Prior use of alpha-glucosidase inhibitor	1,499	0.5%
Prior use of meglitinides	3,499	1.3%
Prior use of DPP-4 inhibitors	54,873	19.8%
Prior use of SGLT-2 inhibitors	81,495	29.4%
Prior use of bromocriptine or colesevelam	1,103	0.4%

Table 1i. Aggregated Characteristics of Wegovy Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Rybelsus initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	20.2	19.9
Mean number of emergency room encounters	0.5	1.5
Mean number of inpatient hospital encounters	0.1	0.5
Mean number of non-acute institutional encounters	0.0	0.2
Mean number of other ambulatory encounters	6.3	16.1
Mean number of filled prescriptions	44.2	35.3
Mean number of generics dispensed	11.9	6.4
Mean number of unique drug classes dispensed	10.4	5.5

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

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

Table 1k. Aggregated Characteristics of Mounjaro Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Mounjaro initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	349,937	N/A[2]
Demographic Characteristics		
Age (years)	59.1	10.7
Age		
0-11 years	*****	*****
12-17 years	*****	*****
18-24 years	2,221	0.6%
25-34 years	12,019	3.4%
35-44 years	38,848	11.1%
45-54 years	76,339	21.8%
55-64 years	88,807	25.4%
65-74 years	97,598	27.9%
≥ 75 years		9.7%
Sex		
Female	213,424	61.0%
Male	136,513	39.0%
Race[3]		
American Indian or Alaska Native	1,034	0.3%
Asian	4,472	1.3%
Black or African American	30,415	8.7%
Multi-racial	4,903	1.4%
Native Hawaiian or Other Pacific Islander	503	0.1%
Unknown	110,726	31.6%
White	197,884	56.5%
Hispanic origin[3]		
Yes	11,300	3.2%
No	204,442	58.4%
Unknown	134,195	38.3%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	0	0.0%
2014	0	0.0%
2015	0	0.0%
2016	0	0.0%
2017	0	0.0%
2018	0	0.0%
2019	0	0.0%
2020	0	0.0%
2021	0	0.0%
2022	60,468	17.3%

Table 1k. Aggregated Characteristics of Mounjaro Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Mounjaro initiators	
Patient Characteristics	Number/Mean	Percent/ Standard Deviation[1]
2023	242,804	69.4%
2024	46,665	13.3%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	1.5	1.8
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	159,212	45.5%
1	59,017	16.9%
2	49,196	14.1%
≥3	82,512	23.6%
Claims-Based frailty index[5]	0.2	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	330,759	94.5%
≥0.25 (frail)	19,178	5.5%
Combined comorbidity score[6]	2.0	2.4
Combined comorbidity score categories		
<1	115,374	33.0%
1	75,050	21.4%
2	50,998	14.6%
≥3	108,515	31.0%
T1DM (>50% code days)[7]	2,620	0.7%
Any T1DM code	12,546	3.6%
Any T2DM code	280,563	80.2%
T2DM (and no T1DM codes)	268,874	76.8%
Obesity	236,053	67.5%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	1,065	0.3%
Obesity only (no T1DM)	234,498	67.0%
T1DM and Obesity	1,555	0.4%
Neither T1DM nor Obesity	112,819	32.2%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	85,452	24.4%
Obesity only (no T2DM)	52,631	15.0%
T2DM and Obesity	183,422	52.4%
Neither T2DM nor obesity	28,432	8.1%
Weight loss procedures	688	0.2%
Body mass index (BMI) (kg/m^2)		
BMI <20	828	0.2%
BMI 20-24	3,465	1.0%
BMI 25-29	22,732	6.5%
BMI 30-39	111,325	31.8%
BMI 40-69	85,831	24.5%
BMI 70+	1,759	0.5%
Hypertension	268,322	76.7%

Table 1k. Aggregated Characteristics of Mounjaro Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Mounjaro initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Hyperlipidemia	269,967	77.1%
Ischemic heart disease	71,642	20.5%
Cerebrovascular disease	13,031	3.7%
Peripheral vascular disease	45,165	12.9%
Heart failure	36,859	10.5%
Obstructive sleep apnea	98,437	28.1%
Chronic kidney disease	174,352	49.8%
Dialysis	3,664	1.0%
Smoking	68,621	19.6%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	191,692	54.8%
Prior use of sulfonylurea	59,736	17.1%
Prior use of thiazolidinedione	19,780	5.7%
Prior use of long/intermediate acting insulin	80,202	22.9%
Prior use of short/rapid acting insulin	47,871	13.7%
Prior use of combination insulin	5,305	1.5%
Prior use of alpha-glucosidase inhibitor	904	0.3%
Prior use of meglitinides	2,488	0.7%
Prior use of DPP-4 inhibitors	25,321	7.2%
Prior use of SGLT-2 inhibitors	89,347	25.5%
Prior use of bromocriptine or colesevelam	1,335	0.4%

Table 1k. Aggregated Characteristics of Mounjaro Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Mounjaro initiators	
Patient Characteristics	Number/Mean	Percent/ Standard Deviation[1]
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	21.6	20.1
Mean number of emergency room encounters	0.5	1.5
Mean number of inpatient hospital encounters	0.1	0.5
Mean number of non-acute institutional encounters	0.0	0.2
Mean number of other ambulatory encounters	5.4	9.5
Mean number of filled prescriptions	47.1	36.6
Mean number of generics dispensed	13.2	7.1
Mean number of unique drug classes dispensed	11.6	6.0

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

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Table 1l. Aggregated Characteristics of Zepbound Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Zepbound initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	27,069	N/A[2]
Demographic Characteristics		
Age (years)	47.2	10.7
Age		
0-11 years	*****	*****
12-17 years	*****	*****
18-24 years	741	2.7%
25-34 years	3,114	11.5%
35-44 years	7,189	26.6%
45-54 years	9,328	34.5%
55-64 years	5,833	21.5%
65-74 years	760	2.8%
≥ 75 years		*****
Sex		
Female	20,679	76.4%
Male	6,390	23.6%
Race[3]		
American Indian or Alaska Native	*****	*****
Asian	405	1.5%
Black or African American	1,802	6.7%
Multi-racial	876	3.2%
Native Hawaiian or Other Pacific Islander	*****	*****
Unknown	9,380	34.7%
White	14,528	53.7%
Hispanic origin[3]		
Yes	1,096	4.0%
No	12,989	48.0%
Unknown	12,984	48.0%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	0	0.0%
2014	0	0.0%
2015	0	0.0%
2016	0	0.0%
2017	0	0.0%
2018	0	0.0%
2019	0	0.0%
2020	0	0.0%
2021	0	0.0%
2022	0	0.0%

Table 1l. Aggregated Characteristics of Zepbound Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Zepbound initiators	
Patient Characteristics	Number/Mean	Percent/ Standard Deviation[1]
2023	5,412	20.0%
2024	21,657	80.0%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	0.2	0.7
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	23,210	85.7%
1	1,884	7.0%
2	1,490	5.5%
≥3	485	1.8%
Claims-Based frailty index[5]	0.1	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	26,963	99.6%
≥0.25 (frail)	106	0.4%
Combined comorbidity score[6]	0.6	1.3
Combined comorbidity score categories		
<1	15,841	58.5%
1	6,739	24.9%
2	2,702	10.0%
≥3	1,787	6.6%
T1DM (>50% code days)[7]	120	0.4%
Any T1DM code	133	0.5%
Any T2DM code	1,386	5.1%
T2DM (and no T1DM codes)	1,324	4.9%
Obesity	21,345	78.9%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	19	0.1%
Obesity only (no T1DM)	21,244	78.5%
T1DM and Obesity	101	0.4%
Neither T1DM nor Obesity	5,705	21.1%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	202	0.7%
Obesity only (no T2DM)	20,223	74.7%
T2DM and Obesity	1,122	4.1%
Neither T2DM nor obesity	5,522	20.4%
Weight loss procedures	41	0.2%
Body mass index (BMI) (kg/m^2)		
BMI <20	113	0.4%
BMI 20-24	296	1.1%
BMI 25-29	2,329	8.6%
BMI 30-39	10,931	40.4%
BMI 40-69	6,543	24.2%
BMI 70+	76	0.3%
Hypertension	10,647	39.3%
Hyperlipidemia	12,052	44.5%

Table 1l. Aggregated Characteristics of Zepbound Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Zepbound initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Ischemic heart disease	1,060	3.9%
Cerebrovascular disease	233	0.9%
Peripheral vascular disease	346	1.3%
Heart failure	350	1.3%
Obstructive sleep apnea	4,896	18.1%
Chronic kidney disease	1,322	4.9%
Dialysis	63	0.2%
Smoking	2,602	9.6%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	2,885	10.7%
Prior use of sulfonylurea	22	0.1%
Prior use of thiazolidinedione	14	0.1%
Prior use of long/intermediate acting insulin	83	0.3%
Prior use of short/rapid acting insulin	145	0.5%
Prior use of combination insulin	*****	*****
Prior use of alpha-glucosidase inhibitor	18	0.1%
Prior use of meglitinides	0	0.0%
Prior use of DPP-4 inhibitors	14	0.1%
Prior use of SGLT-2 inhibitors	144	0.5%
Prior use of bromocriptine or colesevelam	44	0.2%

Table 1l. Aggregated Characteristics of Zepbound Initiators in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Zepbound initiators	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	15.9	15.3
Mean number of emergency room encounters	0.3	0.7
Mean number of inpatient hospital encounters	0.1	0.3
Mean number of non-acute institutional encounters	0.0	0.1
Mean number of other ambulatory encounters	3.8	6.6
Mean number of filled prescriptions	24.7	22.1
Mean number of generics dispensed	8.5	5.9
Mean number of unique drug classes dispensed	7.9	5.2

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

[5]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. J Gerontol A Biol Sci Med Sci. 2018;73(7)980-987.

[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

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

Table 1m. Aggregated Characteristics of DPP-4 Inhibitor Initiators for the 0–17 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitor initiators (ages 0-17 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	1,147	N/A[2]
Demographic Characteristics		
Age (years)	15.4	2.7
0-11 years	106	9.2%
12-17 years	1,041	90.8%
18-24 years	0	0.0%
25-34 years	0	0.0%
35-44 years	0	0.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	674	58.8%
Male	473	41.2%
Race[3]		
American Indian or Alaska Native	21	1.8%
Asian	28	2.4%
Black or African American	199	17.3%
Multi-racial	*****	*****
Native Hawaiian or Other Pacific Islander	*****	*****
Unknown	565	49.3%
White	314	27.4%
Hispanic origin[3]		
Yes	274	23.9%
No	578	50.4%
Unknown	295	25.7%
Year		
2008	21	1.8%
2009	29	2.5%
2010	28	2.4%
2011	44	3.8%
2012	21	1.8%
2013	24	2.1%
2014	15	1.3%
2015	67	5.8%
2016	148	12.9%
2017	183	16.0%
2018	165	14.4%
2019	138	12.0%
2020	126	11.0%
2021	123	10.7%
2022	*****	*****

Table 1m. Aggregated Characteristics of DPP-4 Inhibitor Initiators for the 0–17 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitor initiators (ages 0-17 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2023	*****	*****
2024	*****	*****
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	0.2	0.7
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	1,019	88.8%
1	49	4.3%
2	66	5.8%
≥3	13	1.1%
Claims-Based frailty index[5]	0.1	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	*****	*****
≥0.25 (frail)	*****	*****
Combined comorbidity score[6]	0.9	1.2
Combined comorbidity score categories		
<1	512	44.6%
1	342	29.8%
2	198	17.3%
≥3	95	8.3%
T1DM (>50% code days)[7]	74	6.5%
Any T1DM code	194	16.9%
Any T2DM code	761	66.3%
T2DM (and no T1DM codes)	591	51.5%
Obesity	420	36.6%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	50	4.4%
Obesity only (no T1DM)	396	34.5%
T1DM and Obesity	24	2.1%
Neither T1DM nor Obesity	677	59.0%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	339	29.6%
Obesity only (no T2DM)	168	14.6%
T2DM and Obesity	252	22.0%
Neither T2DM nor obesity	388	33.8%
Weight loss procedures	*****	*****
Body mass index (BMI) (kg/m^2)		
BMI <20	0	0.0%
BMI 20-24	*****	*****
BMI 25-29	*****	*****
BMI 30-39	20	1.7%
BMI 40-69	*****	*****
BMI 70+	0	0.0%
Hypertension	186	16.2%

Table 1m. Aggregated Characteristics of DPP-4 Inhibitor Initiators for the 0–17 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitor initiators (ages 0-17 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Hyperlipidemia	209	18.2%
Ischemic heart disease	*****	*****
Cerebrovascular disease	*****	*****
Peripheral vascular disease	*****	*****
Heart failure	*****	*****
Obstructive sleep apnea	57	5.0%
Chronic kidney disease	388	33.8%
Dialysis	*****	*****
Smoking	19	1.7%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	845	73.7%
Prior use of sulfonylurea	119	10.4%
Prior use of thiazolidinedione	27	2.4%
Prior use of long/intermediate acting insulin	273	23.8%
Prior use of short/rapid acting insulin	212	18.5%
Prior use of combination insulin	27	2.4%
Prior use of alpha-glucosidase inhibitor	*****	*****
Prior use of meglitinides	*****	*****
Prior use of DPP-4 inhibitors[8]	0	0.0%
Prior use of SGLT-2 inhibitors	23	2.0%
Prior use of bromocriptine or colesevelam	*****	*****

Table 1m. Aggregated Characteristics of DPP-4 Inhibitor Initiators for the 0–17 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitor initiators (ages 0-17 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	17.7	24.4
Mean number of emergency room encounters	0.9	1.7
Mean number of inpatient hospital encounters	0.2	0.6
Mean number of non-acute institutional encounters	0.0	0.2
Mean number of other ambulatory encounters	12.5	34.2
Mean number of filled prescriptions	25.4	27.1
Mean number of generics dispensed	8.0	5.8
Mean number of unique drug classes dispensed	7.1	5.1

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

[5]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. J Gerontol A Biol Sci Med Sci. 2018;73(7)980-987.

[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

[8]Identified in the procedure table only.

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

Table 1n. Aggregated Characteristics of DPP-4 Inhibitor/SGLT-2 Inhibitor Combination Product Initiators for the 0–17 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators (ages 0-17 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	*****	N/A[2]
Demographic Characteristics		
Age (years)	16.9	1.4
0-11 years	0	0.0%
12-17 years	*****	*****
18-24 years	0	0.0%
25-34 years	0	0.0%
35-44 years	0	0.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	*****	*****
Male	*****	*****
Race[3]		
American Indian or Alaska Native	0	0.0%
Asian	*****	*****
Black or African American	*****	*****
Multi-racial	0	0.0%
Native Hawaiian or Other Pacific Islander	0	0.0%
Unknown	*****	*****
White	*****	*****
Hispanic origin[3]		
Yes	*****	*****
No	*****	*****
Unknown	*****	*****
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	0	0.0%
2014	0	0.0%
2015	*****	*****
2016	*****	*****
2017	0	0.0%
2018	*****	*****
2019	*****	*****
2020	*****	*****
2021	0	0.0%
2022	0	0.0%

Table 1n. Aggregated Characteristics of DPP-4 Inhibitor/SGLT-2 Inhibitor Combination Product Initiators for the 0–17 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators (ages 0-17 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2023	0	0.0%
2024	0	0.0%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	0.0	NaN
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	*****	*****
1	0	0.0%
2	0	0.0%
≥3	0	0.0%
Claims-Based frailty index[5]	0.1	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	*****	*****
≥0.25 (frail)	0	0.0%
Combined comorbidity score[6]	0.7	0.6
Combined comorbidity score categories		
<1	*****	*****
1	*****	*****
2	*****	*****
≥3	*****	*****
T1DM (>50% code days)[7]	*****	*****
Any T1DM code	*****	*****
Any T2DM code	*****	*****
T2DM (and no T1DM codes)	*****	*****
Obesity	*****	*****
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	*****	*****
Obesity only (no T1DM)	*****	*****
T1DM and Obesity	0	0.0%
Neither T1DM nor Obesity	*****	*****
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	*****	*****
Obesity only (no T2DM)	*****	*****
T2DM and Obesity	*****	*****
Neither T2DM nor obesity	*****	*****
Weight loss procedures	0	0.0%
Body mass index (BMI) (kg/m^2)		
BMI <20	0	0.0%
BMI 20-24	0	0.0%
BMI 25-29	0	0.0%
BMI 30-39	0	0.0%
BMI 40-69	0	0.0%

Table 1n. Aggregated Characteristics of DPP-4 Inhibitor/SGLT-2 Inhibitor Combination Product Initiators for the 0–17 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators (ages 0-17 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
BMI 70+	0	0.0%
Hypertension	*****	*****
Hyperlipidemia	*****	*****
Ischemic heart disease	0	0.0%
Cerebrovascular disease	0	0.0%
Peripheral vascular disease	0	0.0%
Heart failure	0	0.0%
Obstructive sleep apnea	*****	*****
Chronic kidney disease	*****	*****
Dialysis	0	0.0%
Smoking	*****	*****
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	*****	*****
Prior use of sulfonylurea	0	0.0%
Prior use of thiazolidinedione	0	0.0%
Prior use of long/intermediate acting insulin	*****	*****
Prior use of short/rapid acting insulin	*****	*****
Prior use of combination insulin	0	0.0%
Prior use of alpha-glucosidase inhibitor	0	0.0%
Prior use of meglitinides	0	0.0%
Prior use of DPP-4 inhibitors	*****	*****
Prior use of SGLT-2 inhibitors	0	0.0%
Prior use of bromocriptine or colesevelam	0	0.0%

Table 1n. Aggregated Characteristics of DPP-4 Inhibitor/SGLT-2 Inhibitor Combination Product Initiators for the 0–17 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators (ages 0-17 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	17.6	9.2
Mean number of emergency room encounters	1.9	3.7
Mean number of inpatient hospital encounters	0.0	NaN
Mean number of non-acute institutional encounters	0.0	NaN
Mean number of other ambulatory encounters	8.2	14.1
Mean number of filled prescriptions	23.3	28.0
Mean number of generics dispensed	7.5	6.8
Mean number of unique drug classes dispensed	7.0	6.5

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

[5]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. J Gerontol A Biol Sci Med Sci. 2018;73(7)980-987.

[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

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

Table 1o. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators for the 0–17 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators (ages 0-17 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	117	N/A[2]
Demographic Characteristics		
Age (years)	15.8	2.6
0-11 years	*****	*****
12-17 years	*****	*****
18-24 years	0	0.0%
25-34 years	0	0.0%
35-44 years	0	0.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	76	65.0%
Male	41	35.0%
Race[3]		
American Indian or Alaska Native	0	0.0%
Asian	*****	*****
Black or African American	*****	*****
Multi-racial	*****	*****
Native Hawaiian or Other Pacific Islander	0	0.0%
Unknown	71	60.7%
White	34	29.1%
Hispanic origin[3]		
Yes	*****	*****
No	*****	*****
Unknown	87	74.4%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	0	0.0%
2014	0	0.0%
2015	0	0.0%
2016	0	0.0%
2017	0	0.0%
2018	0	0.0%
2019	0	0.0%
2020	0	0.0%
2021	0	0.0%
2022	20	17.1%

Table 1o. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators for the 0–17 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators (ages 0-17 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2023	74	63.2%
2024	23	19.7%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	0.1	0.6
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	110	94.0%
1	0	0.0%
2	*****	*****
≥3	*****	*****
Claims-Based frailty index[5]	0.1	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	*****	*****
≥0.25 (frail)	*****	*****
Combined comorbidity score[6]	0.8	1.2
Combined comorbidity score categories		
<1	58	49.6%
1	35	29.9%
2	*****	*****
≥3	*****	*****
T1DM (>50% code days)[7]	*****	*****
Any T1DM code	*****	*****
Any T2DM code	35	29.9%
T2DM (and no T1DM codes)	32	27.4%
Obesity	70	59.8%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	*****	*****
Obesity only (no T1DM)	68	58.1%
T1DM and Obesity	*****	*****
Neither T1DM nor Obesity	46	39.3%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	*****	*****
Obesity only (no T2DM)	48	41.0%
T2DM and Obesity	*****	*****
Neither T2DM nor obesity	37	31.6%
Weight loss procedures	0	0.0%
Body mass index (BMI) (kg/m^2)		
BMI <20	0	0.0%
BMI 20-24	0	0.0%
BMI 25-29	*****	*****
BMI 30-39	13	11.1%
BMI 40-69	*****	*****
BMI 70+	*****	*****
Hypertension	16	13.7%
Hyperlipidemia	33	28.2%

Table 1o. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators for the 0–17 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators (ages 0-17 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Ischemic heart disease	*****	*****
Cerebrovascular disease	*****	*****
Peripheral vascular disease	*****	*****
Heart failure	0	0.0%
Obstructive sleep apnea	11	9.4%
Chronic kidney disease	19	16.2%
Dialysis	0	0.0%
Smoking	*****	*****
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	43	36.8%
Prior use of sulfonylurea	0	0.0%
Prior use of thiazolidinedione	0	0.0%
Prior use of long/intermediate acting insulin	*****	*****
Prior use of short/rapid acting insulin	*****	*****
Prior use of combination insulin	0	0.0%
Prior use of alpha-glucosidase inhibitor	*****	*****
Prior use of meglitinides	0	0.0%
Prior use of DPP-4 inhibitors	*****	*****
Prior use of SGLT-2 inhibitors	*****	*****
Prior use of bromocriptine or colesevelam	0	0.0%

Table 1o. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators for the 0–17 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators (ages 0-17 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	17.7	20.6
Mean number of emergency room encounters	0.3	1.0
Mean number of inpatient hospital encounters	0.1	0.4
Mean number of non-acute institutional encounters	0.0	0.1
Mean number of other ambulatory encounters	3.5	5.8
Mean number of filled prescriptions	22.4	19.9
Mean number of generics dispensed	7.2	5.2
Mean number of unique drug classes dispensed	6.5	4.5

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

[5]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. J Gerontol A Biol Sci Med Sci. 2018;73(7)980-987.

[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

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

Table 1p. Aggregated Characteristics of GLP-1 Agonist Initiators for the 0–17 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators (ages 0-17 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	10,040	N/A[2]
Demographic Characteristics		
Age (years)	15.4	2.0
0-11 years	597	5.9%
12-17 years	9,443	94.1%
18-24 years	0	0.0%
25-34 years	0	0.0%
35-44 years	0	0.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	6,210	61.9%
Male	3,830	38.1%
Race[3]		
American Indian or Alaska Native	157	1.6%
Asian	163	1.6%
Black or African American	2,457	24.5%
Multi-racial	159	1.6%
Native Hawaiian or Other Pacific Islander	58	0.6%
Unknown	4,323	43.1%
White	2,723	27.1%
Hispanic origin[3]		
Yes	2,217	22.1%
No	5,447	54.3%
Unknown	2,376	23.7%
Year		
2008	12	0.1%
2009	25	0.2%
2010	48	0.5%
2011	47	0.5%
2012	43	0.4%
2013	30	0.3%
2014	35	0.3%
2015	153	1.5%
2016	231	2.3%
2017	319	3.2%
2018	424	4.2%
2019	948	9.4%
2020	1,694	16.9%
2021	4,137	41.2%
2022	521	5.2%
2023	1,176	11.7%

Table 1p. Aggregated Characteristics of GLP-1 Agonist Initiators for the 0–17 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators (ages 0-17 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2024	197	2.0%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	0.2	0.8
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	8,885	88.5%
1	238	2.4%
2	723	7.2%
≥3	194	1.9%
Claims-Based frailty index[5]	0.1	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	9,981	99.4%
≥0.25 (frail)	59	0.6%
Combined comorbidity score[6]	1.1	1.1
Combined comorbidity score categories		
<1	3,523	35.1%
1	3,755	37.4%
2	1,799	17.9%
≥3	963	9.6%
T1DM (>50% code days)[7]	724	7.2%
Any T1DM code	2,149	21.4%
Any T2DM code	6,097	60.7%
T2DM (and no T1DM codes)	4,214	42.0%
Obesity	5,924	59.0%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	382	3.8%
Obesity only (no T1DM)	5,582	55.6%
T1DM and Obesity	342	3.4%
Neither T1DM nor Obesity	3,734	37.2%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	1,820	18.1%
Obesity only (no T2DM)	3,530	35.2%
T2DM and Obesity	2,394	23.8%
Neither T2DM nor obesity	2,296	22.9%
Weight loss procedures	*****	*****
Body mass index (BMI) (kg/m^2)		
BMI <20	*****	*****
BMI 20-24	*****	*****
BMI 25-29	16	0.2%
BMI 30-39	202	2.0%
BMI 40-69	206	2.1%
BMI 70+	*****	*****
Hypertension	1,345	13.4%
Hyperlipidemia	2,036	20.3%
Ischemic heart disease	17	0.2%

Table 1p. Aggregated Characteristics of GLP-1 Agonist Initiators for the 0–17 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators (ages 0-17 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Cerebrovascular disease	23	0.2%
Peripheral vascular disease	19	0.2%
Heart failure	48	0.5%
Obstructive sleep apnea	929	9.3%
Chronic kidney disease	4,110	40.9%
Dialysis	17	0.2%
Smoking	83	0.8%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	7,185	71.6%
Prior use of sulfonylurea	226	2.3%
Prior use of thiazolidinedione	91	0.9%
Prior use of long/intermediate acting insulin	3,861	38.5%
Prior use of short/rapid acting insulin	3,313	33.0%
Prior use of combination insulin	192	1.9%
Prior use of alpha-glucosidase inhibitor	17	0.2%
Prior use of meglitinides	*****	*****
Prior use of DPP-4 inhibitors	146	1.5%
Prior use of SGLT-2 inhibitors	108	1.1%
Prior use of bromocriptine or colesevelam	*****	*****

Table 1p. Aggregated Characteristics of GLP-1 Agonist Initiators for the 0–17 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators (ages 0-17 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	17.6	22.6
Mean number of emergency room encounters	0.7	1.4
Mean number of inpatient hospital encounters	0.2	0.5
Mean number of non-acute institutional encounters	0.0	0.3
Mean number of other ambulatory encounters	13.6	37.2
Mean number of filled prescriptions	24.0	24.4
Mean number of generics dispensed	7.2	5.1
Mean number of unique drug classes dispensed	6.4	4.5

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

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[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

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Table 1q. Aggregated Characteristics of SGLT-2 Inhibitor Initiators for the 0–17 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators (ages 0-17 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	1,037	N/A[2]
Demographic Characteristics		
Age (years)	15.7	2.6
0-11 years	83	8.0%
12-17 years	954	92.0%
18-24 years	0	0.0%
25-34 years	0	0.0%
35-44 years	0	0.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	574	55.4%
Male	463	44.6%
Race[3]		
American Indian or Alaska Native	*****	*****
Asian	22	2.1%
Black or African American	188	18.1%
Multi-racial	17	1.6%
Native Hawaiian or Other Pacific Islander	*****	*****
Unknown	496	47.8%
White	293	28.3%
Hispanic origin[3]		
Yes	262	25.3%
No	525	50.6%
Unknown	250	24.1%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	*****	*****
2014	*****	*****
2015	29	2.8%
2016	65	6.3%
2017	104	10.0%
2018	135	13.0%
2019	161	15.5%
2020	145	14.0%
2021	256	24.7%
2022	27	2.6%
2023	76	7.3%

Table 1q. Aggregated Characteristics of SGLT-2 Inhibitor Initiators for the 0–17 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators (ages 0-17 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2024	19	1.8%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	0.5	1.1
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	808	77.9%
1	39	3.8%
2	139	13.4%
≥3	51	4.9%
Claims-Based frailty index[5]	0.1	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	1,025	98.8%
≥0.25 (frail)	12	1.2%
Combined comorbidity score[6]	1.5	1.7
Combined comorbidity score categories		
<1	298	28.7%
1	355	34.2%
2	188	18.1%
≥3	196	18.9%
T1DM (>50% code days)[7]	96	9.3%
Any T1DM code	237	22.9%
Any T2DM code	705	68.0%
T2DM (and no T1DM codes)	507	48.9%
Obesity	431	41.6%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	69	6.7%
Obesity only (no T1DM)	404	39.0%
T1DM and Obesity	27	2.6%
Neither T1DM nor Obesity	537	51.8%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	260	25.1%
Obesity only (no T2DM)	184	17.7%
T2DM and Obesity	247	23.8%
Neither T2DM nor obesity	346	33.4%
Weight loss procedures	*****	*****
Body mass index (BMI) (kg/m^2)		
BMI <20	*****	*****
BMI 20-24	*****	*****
BMI 25-29	*****	*****
BMI 30-39	20	1.9%
BMI 40-69	18	1.7%
BMI 70+	0	0.0%
Hypertension	181	17.5%
Hyperlipidemia	224	21.6%
Ischemic heart disease	22	2.1%

Table 1q. Aggregated Characteristics of SGLT-2 Inhibitor Initiators for the 0–17 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators (ages 0-17 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Cerebrovascular disease	*****	*****
Peripheral vascular disease	*****	*****
Heart failure	103	9.9%
Obstructive sleep apnea	99	9.5%
Chronic kidney disease	504	48.6%
Dialysis	*****	*****
Smoking	*****	*****
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	701	67.6%
Prior use of sulfonylurea	84	8.1%
Prior use of thiazolidinedione	43	4.1%
Prior use of long/intermediate acting insulin	358	34.5%
Prior use of short/rapid acting insulin	278	26.8%
Prior use of combination insulin	26	2.5%
Prior use of alpha-glucosidase inhibitor	0	0.0%
Prior use of meglitinides	0	0.0%
Prior use of DPP-4 inhibitors	61	5.9%
Prior use of SGLT-2 inhibitors[8]	*****	*****
Prior use of bromocriptine or colesevelam	*****	*****

Table 1q. Aggregated Characteristics of SGLT-2 Inhibitor Initiators for the 0–17 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators (ages 0-17 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	17.0	17.9
Mean number of emergency room encounters	0.9	1.7
Mean number of inpatient hospital encounters	0.3	0.8
Mean number of non-acute institutional encounters	0.0	0.2
Mean number of other ambulatory encounters	16.1	42.2
Mean number of filled prescriptions	29.5	29.8
Mean number of generics dispensed	8.6	6.2
Mean number of unique drug classes dispensed	7.6	5.4

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

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[8]Identified in the procedure table only.

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

Table 1r. Aggregated Characteristics of DPP-4 Inhibitor Initiators for the 18–24 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitor initiators (ages 18-24 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	8,862	N/A[2]
Demographic Characteristics		
Age (years)	22.1	2.0
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	8,862	100.0%
25-34 years	0	0.0%
35-44 years	0	0.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	5,475	61.8%
Male	3,387	38.2%
Race[3]		
American Indian or Alaska Native	146	1.6%
Asian	290	3.3%
Black or African American	1,465	16.5%
Multi-racial	58	0.7%
Native Hawaiian or Other Pacific Islander	39	0.4%
Unknown	4,387	49.5%
White	2,477	28.0%
Hispanic origin[3]		
Yes	1,897	21.4%
No	4,359	49.2%
Unknown	2,606	29.4%
Year		
2008	82	0.9%
2009	155	1.7%
2010	115	1.3%
2011	271	3.1%
2012	319	3.6%
2013	226	2.6%
2014	259	2.9%
2015	381	4.3%
2016	673	7.6%
2017	1,252	14.1%
2018	1,354	15.3%
2019	1,117	12.6%
2020	1,173	13.2%
2021	1,252	14.1%
2022	126	1.4%
2023	96	1.1%

Table 1r. Aggregated Characteristics of DPP-4 Inhibitor Initiators for the 18–24 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitor initiators (ages 18-24 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2024	11	0.1%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	0.4	0.9
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	7,240	81.7%
1	651	7.3%
2	669	7.5%
≥3	302	3.4%
Claims-Based frailty index[5]	0.1	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	8,715	98.3%
≥0.25 (frail)	147	1.7%
Combined comorbidity score[6]	1.2	1.5
Combined comorbidity score categories		
<1	3,217	36.3%
1	2,851	32.2%
2	1,524	17.2%
≥3	1,270	14.3%
T1DM (>50% code days)[7]	296	3.3%
Any T1DM code	1,107	12.5%
Any T2DM code	7,383	83.3%
T2DM (and no T1DM codes)	6,377	72.0%
Obesity	3,609	40.7%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	223	2.5%
Obesity only (no T1DM)	3,536	39.9%
T1DM and Obesity	73	0.8%
Neither T1DM nor Obesity	5,030	56.8%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	3,572	40.3%
Obesity only (no T2DM)	804	9.1%
T2DM and Obesity	2,805	31.7%
Neither T2DM nor obesity	1,681	19.0%
Weight loss procedures	14	0.2%
Body mass index (BMI) (kg/m^2)		
BMI <20	22	0.2%
BMI 20-24	60	0.7%
BMI 25-29	156	1.8%
BMI 30-39	727	8.2%
BMI 40-69	873	9.9%
BMI 70+	35	0.4%
Hypertension	2,459	27.7%
Hyperlipidemia	2,558	28.9%
Ischemic heart disease	99	1.1%

Table 1r. Aggregated Characteristics of DPP-4 Inhibitor Initiators for the 18–24 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitor initiators (ages 18-24 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Cerebrovascular disease	49	0.6%
Peripheral vascular disease	85	1.0%
Heart failure	107	1.2%
Obstructive sleep apnea	492	5.6%
Chronic kidney disease	3,772	42.6%
Dialysis	58	0.7%
Smoking	674	7.6%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	6,359	71.8%
Prior use of sulfonylurea	1,792	20.2%
Prior use of thiazolidinedione	287	3.2%
Prior use of long/intermediate acting insulin	1,992	22.5%
Prior use of short/rapid acting insulin	1,326	15.0%
Prior use of combination insulin	185	2.1%
Prior use of alpha-glucosidase inhibitor	16	0.2%
Prior use of meglitinides	31	0.3%
Prior use of DPP-4 inhibitors[8]	*****	*****
Prior use of SGLT-2 inhibitors	449	5.1%
Prior use of bromocriptine or colesevelam	19	0.2%

Table 1r. Aggregated Characteristics of DPP-4 Inhibitor Initiators for the 18–24 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitor initiators (ages 18-24 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	16.2	22.6
Mean number of emergency room encounters	1.4	3.1
Mean number of inpatient hospital encounters	0.3	0.9
Mean number of non-acute institutional encounters	0.0	0.3
Mean number of other ambulatory encounters	14.3	45.7
Mean number of filled prescriptions	28.4	32.3
Mean number of generics dispensed	8.7	6.7
Mean number of unique drug classes dispensed	7.7	5.7

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

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[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

[8]Identified in the procedure table only.

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

Table 1s. Aggregated Characteristics of DPP-4 Inhibitor/SGLT-2 Inhibitor Combination Product Initiators for the 18–24 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators (ages 18-24 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	*****	N/A[2]
Demographic Characteristics		
Age (years)	*****	2.0
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	*****	100.0%
25-34 years	0	0.0%
35-44 years	0	0.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	*****	53.0%
Male	*****	47.0%
Race[3]		
American Indian or Alaska Native	*****	*****
Asian	*****	*****
Black or African American	*****	9.8%
Multi-racial	0	0.0%
Native Hawaiian or Other Pacific Islander	0	0.0%
Unknown	*****	54.9%
White	*****	28.7%
Hispanic origin[3]		
Yes	*****	17.1%
No	*****	40.9%
Unknown	*****	42.1%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	0	0.0%
2014	0	0.0%
2015	*****	*****
2016	*****	7.9%
2017	*****	11.0%
2018	*****	7.9%
2019	*****	14.6%
2020	*****	18.3%
2021	*****	25.6%
2022	*****	*****

Table 1s. Aggregated Characteristics of DPP-4 Inhibitor/SGLT-2 Inhibitor Combination Product Initiators for the 18–24 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators (ages 18-24 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2023	*****	*****
2024	0	0.0%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	0.2	0.6
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	*****	89.6%
1	*****	*****
2	*****	*****
≥3	*****	*****
Claims-Based frailty index[5]	0.1	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	*****	*****
≥0.25 (frail)	*****	*****
Combined comorbidity score[6]	1.0	1.1
Combined comorbidity score categories		
<1	*****	36.0%
1	*****	42.1%
2	*****	12.8%
≥3	*****	9.1%
T1DM (>50% code days)[7]	*****	*****
Any T1DM code	*****	12.2%
Any T2DM code	*****	83.5%
T2DM (and no T1DM codes)	*****	73.2%
Obesity	*****	43.3%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	*****	*****
Obesity only (no T1DM)	*****	42.1%
T1DM and Obesity	*****	*****
Neither T1DM nor Obesity	*****	53.7%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	*****	40.9%
Obesity only (no T2DM)	*****	11.0%
T2DM and Obesity	*****	32.3%
Neither T2DM nor obesity	*****	15.9%
Weight loss procedures	*****	*****
Body mass index (BMI) (kg/m^2)		
BMI <20	0	0.0%
BMI 20-24	0	0.0%
BMI 25-29	*****	*****
BMI 30-39	*****	11.0%
BMI 40-69	*****	12.2%
BMI 70+	0	0.0%
Hypertension	*****	24.4%
Hyperlipidemia	*****	40.9%

Table 1s. Aggregated Characteristics of DPP-4 Inhibitor/SGLT-2 Inhibitor Combination Product Initiators for the 18–24 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators (ages 18-24 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Ischemic heart disease	0	0.0%
Cerebrovascular disease	*****	*****
Peripheral vascular disease	0	0.0%
Heart failure	*****	*****
Obstructive sleep apnea	*****	*****
Chronic kidney disease	*****	50.0%
Dialysis	*****	*****
Smoking	*****	6.7%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	*****	64.0%
Prior use of sulfonylurea	*****	23.2%
Prior use of thiazolidinedione	*****	7.9%
Prior use of long/intermediate acting insulin	*****	22.6%
Prior use of short/rapid acting insulin	*****	12.8%
Prior use of combination insulin	*****	*****
Prior use of alpha-glucosidase inhibitor	*****	*****
Prior use of meglitinides	0	0.0%
Prior use of DPP-4 inhibitors	*****	14.6%
Prior use of SGLT-2 inhibitors	*****	15.2%
Prior use of bromocriptine or colesevelam	0	0.0%

Table 1s. Aggregated Characteristics of DPP-4 Inhibitor/SGLT-2 Inhibitor Combination Product Initiators for the 18–24 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators (ages 18-24 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	14.5	23.8
Mean number of emergency room encounters	1.4	5.4
Mean number of inpatient hospital encounters	0.1	0.6
Mean number of non-acute institutional encounters	0.0	0.2
Mean number of other ambulatory encounters	25.5	78.4
Mean number of filled prescriptions	31.4	40.7
Mean number of generics dispensed	8.6	7.1
Mean number of unique drug classes dispensed	7.3	5.8

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

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Table 1t. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators for the 18–24 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators (ages 18-24 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	2,919	N/A[2]
Demographic Characteristics		
Age (years)	22.4	1.9
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	2,919	100.0%
25-34 years	0	0.0%
35-44 years	0	0.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	2,295	78.6%
Male	624	21.4%
Race[3]		
American Indian or Alaska Native	*****	*****
Asian	58	2.0%
Black or African American	164	5.6%
Multi-racial	126	4.3%
Native Hawaiian or Other Pacific Islander	*****	*****
Unknown	1,415	48.5%
White	1,143	39.2%
Hispanic origin[3]		
Yes	146	5.0%
No	1,022	35.0%
Unknown	1,751	60.0%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	0	0.0%
2014	0	0.0%
2015	0	0.0%
2016	0	0.0%
2017	0	0.0%
2018	0	0.0%
2019	0	0.0%
2020	0	0.0%
2021	0	0.0%
2022	452	15.5%

Table 1t. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators for the 18–24 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators (ages 18-24 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2023	1,593	54.6%
2024	874	29.9%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	0.1	0.5
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	2,736	93.7%
1	89	3.0%
2	68	2.3%
≥3	26	0.9%
Claims-Based frailty index[5]	0.1	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	2,908	99.6%
≥0.25 (frail)	11	0.4%
Combined comorbidity score[6]	0.8	1.2
Combined comorbidity score categories		
<1	1,347	46.1%
1	968	33.2%
2	395	13.5%
≥3	209	7.2%
T1DM (>50% code days)[7]	62	2.1%
Any T1DM code	110	3.8%
Any T2DM code	758	26.0%
T2DM (and no T1DM codes)	688	23.6%
Obesity	2,066	70.8%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	23	0.8%
Obesity only (no T1DM)	2,027	69.4%
T1DM and Obesity	39	1.3%
Neither T1DM nor Obesity	830	28.4%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	169	5.8%
Obesity only (no T2DM)	1,547	53.0%
T2DM and Obesity	519	17.8%
Neither T2DM nor obesity	684	23.4%
Weight loss procedures	*****	*****
Body mass index (BMI) (kg/m^2)		
BMI <20	18	0.6%
BMI 20-24	22	0.8%
BMI 25-29	116	4.0%
BMI 30-39	762	26.1%
BMI 40-69	891	30.5%
BMI 70+	22	0.8%
Hypertension	451	15.5%
Hyperlipidemia	736	25.2%

Table 1t. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators for the 18–24 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators (ages 18-24 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Ischemic heart disease	13	0.4%
Cerebrovascular disease	*****	*****
Peripheral vascular disease	*****	*****
Heart failure	12	0.4%
Obstructive sleep apnea	227	7.8%
Chronic kidney disease	452	15.5%
Dialysis	*****	*****
Smoking	133	4.6%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	962	33.0%
Prior use of sulfonylurea	52	1.8%
Prior use of thiazolidinedione	24	0.8%
Prior use of long/intermediate acting insulin	179	6.1%
Prior use of short/rapid acting insulin	172	5.9%
Prior use of combination insulin	*****	*****
Prior use of alpha-glucosidase inhibitor	0	0.0%
Prior use of meglitinides	*****	*****
Prior use of DPP-4 inhibitors	21	0.7%
Prior use of SGLT-2 inhibitors	128	4.4%
Prior use of bromocriptine or colesevelam	*****	*****

Table 1t. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators for the 18–24 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators (ages 18-24 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	13.8	15.3
Mean number of emergency room encounters	0.5	1.2
Mean number of inpatient hospital encounters	0.1	0.4
Mean number of non-acute institutional encounters	0.0	0.1
Mean number of other ambulatory encounters	3.6	7.1
Mean number of filled prescriptions	20.8	21.7
Mean number of generics dispensed	7.6	5.7
Mean number of unique drug classes dispensed	7.0	5.0

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

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Table 1u. Aggregated Characteristics of GLP-1 Agonist Initiators for the 18–24 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators (ages 18-24 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	30,428	N/A[2]
Demographic Characteristics		
Age (years)	22.0	2.0
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	30,428	100.0%
25-34 years	0	0.0%
35-44 years	0	0.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	22,855	75.1%
Male	7,573	24.9%
Race[3]		
American Indian or Alaska Native	284	0.9%
Asian	614	2.0%
Black or African American	4,030	13.2%
Multi-racial	507	1.7%
Native Hawaiian or Other Pacific Islander	73	0.2%
Unknown	13,702	45.0%
White	11,218	36.9%
Hispanic origin[3]		
Yes	3,657	12.0%
No	14,916	49.0%
Unknown	11,855	39.0%
Year		
2008	17	0.1%
2009	77	0.3%
2010	188	0.6%
2011	214	0.7%
2012	232	0.8%
2013	240	0.8%
2014	209	0.7%
2015	503	1.7%
2016	921	3.0%
2017	1,634	5.4%
2018	2,130	7.0%
2019	2,836	9.3%
2020	3,428	11.3%
2021	6,827	22.4%
2022	3,436	11.3%
2023	6,777	22.3%

Table 1u. Aggregated Characteristics of GLP-1 Agonist Initiators for the 18–24 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators (ages 18-24 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2024	759	2.5%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	0.2	0.7
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	26,523	87.2%
1	1,650	5.4%
2	1,586	5.2%
≥3	669	2.2%
Claims-Based frailty index[5]	0.1	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	30,184	99.2%
≥0.25 (frail)	244	0.8%
Combined comorbidity score[6]	1.1	1.3
Combined comorbidity score categories		
<1	11,745	38.6%
1	10,184	33.5%
2	5,081	16.7%
≥3	3,418	11.2%
T1DM (>50% code days)[7]	1,514	5.0%
Any T1DM code	3,242	10.7%
Any T2DM code	14,116	46.4%
T2DM (and no T1DM codes)	11,609	38.2%
Obesity	18,631	61.2%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	912	3.0%
Obesity only (no T1DM)	18,029	59.3%
T1DM and Obesity	602	2.0%
Neither T1DM nor Obesity	10,885	35.8%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	4,947	16.3%
Obesity only (no T2DM)	11,969	39.3%
T2DM and Obesity	6,662	21.9%
Neither T2DM nor obesity	6,850	22.5%
Weight loss procedures	31	0.1%
Body mass index (BMI) (kg/m^2)		
BMI <20	59	0.2%
BMI 20-24	141	0.5%
BMI 25-29	727	2.4%
BMI 30-39	4,916	16.2%
BMI 40-69	6,198	20.4%
BMI 70+	231	0.8%
Hypertension	5,982	19.7%
Hyperlipidemia	7,212	23.7%
Ischemic heart disease	163	0.5%

Table 1u. Aggregated Characteristics of GLP-1 Agonist Initiators for the 18–24 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators (ages 18-24 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Cerebrovascular disease	120	0.4%
Peripheral vascular disease	144	0.5%
Heart failure	195	0.6%
Obstructive sleep apnea	2,426	8.0%
Chronic kidney disease	9,049	29.7%
Dialysis	97	0.3%
Smoking	1,913	6.3%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	16,206	53.3%
Prior use of sulfonylurea	2,280	7.5%
Prior use of thiazolidinedione	560	1.8%
Prior use of long/intermediate acting insulin	6,294	20.7%
Prior use of short/rapid acting insulin	4,970	16.3%
Prior use of combination insulin	408	1.3%
Prior use of alpha-glucosidase inhibitor	41	0.1%
Prior use of meglitinides	41	0.1%
Prior use of DPP-4 inhibitors	1,552	5.1%
Prior use of SGLT-2 inhibitors	1,448	4.8%
Prior use of bromocriptine or colesevelam	48	0.2%

Table 1u. Aggregated Characteristics of GLP-1 Agonist Initiators for the 18–24 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators (ages 18-24 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	16.7	21.0
Mean number of emergency room encounters	1.0	2.3
Mean number of inpatient hospital encounters	0.1	0.6
Mean number of non-acute institutional encounters	0.0	0.2
Mean number of other ambulatory encounters	10.6	36.3
Mean number of filled prescriptions	26.1	27.3
Mean number of generics dispensed	8.6	6.3
Mean number of unique drug classes dispensed	7.7	5.4

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

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Table 1v. Aggregated Characteristics of SGLT-2 Inhibitor Initiators for the 18–24 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators (ages 18-24 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	9,331	N/A[2]
Demographic Characteristics		
Age (years)	22.1	2.0
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	9,331	100.0%
25-34 years	0	0.0%
35-44 years	0	0.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	5,546	59.4%
Male	3,785	40.6%
Race[3]		
American Indian or Alaska Native	129	1.4%
Asian	320	3.4%
Black or African American	1,472	15.8%
Multi-racial	85	0.9%
Native Hawaiian or Other Pacific Islander	47	0.5%
Unknown	4,409	47.3%
White	2,869	30.7%
Hispanic origin[3]		
Yes	1,945	20.8%
No	4,711	50.5%
Unknown	2,675	28.7%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	40	0.4%
2014	166	1.8%
2015	337	3.6%
2016	457	4.9%
2017	859	9.2%
2018	1,077	11.5%
2019	1,201	12.9%
2020	1,596	17.1%
2021	2,497	26.8%
2022	483	5.2%
2023	526	5.6%

Table 1v. Aggregated Characteristics of SGLT-2 Inhibitor Initiators for the 18–24 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators (ages 18-24 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2024	92	1.0%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	0.5	1.1
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	7,184	77.0%
1	754	8.1%
2	904	9.7%
≥3	489	5.2%
Claims-Based frailty index[5]	0.1	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	9,211	98.7%
≥0.25 (frail)	120	1.3%
Combined comorbidity score[6]	1.4	1.6
Combined comorbidity score categories		
<1	2,748	29.5%
1	3,090	33.1%
2	1,830	19.6%
≥3	1,663	17.8%
T1DM (>50% code days)[7]	562	6.0%
Any T1DM code	1,388	14.9%
Any T2DM code	7,590	81.3%
T2DM (and no T1DM codes)	6,430	68.9%
Obesity	4,432	47.5%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	400	4.3%
Obesity only (no T1DM)	4,270	45.8%
T1DM and Obesity	162	1.7%
Neither T1DM nor Obesity	4,499	48.2%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	3,115	33.4%
Obesity only (no T2DM)	1,117	12.0%
T2DM and Obesity	3,315	35.5%
Neither T2DM nor obesity	1,784	19.1%
Weight loss procedures	*****	*****
Body mass index (BMI) (kg/m^2)		
BMI <20	29	0.3%
BMI 20-24	80	0.9%
BMI 25-29	235	2.5%
BMI 30-39	1,040	11.1%
BMI 40-69	1,240	13.3%
BMI 70+	38	0.4%
Hypertension	2,735	29.3%
Hyperlipidemia	3,025	32.4%
Ischemic heart disease	161	1.7%

Table 1v. Aggregated Characteristics of SGLT-2 Inhibitor Initiators for the 18–24 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators (ages 18-24 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Cerebrovascular disease	67	0.7%
Peripheral vascular disease	98	1.1%
Heart failure	439	4.7%
Obstructive sleep apnea	675	7.2%
Chronic kidney disease	5,090	54.5%
Dialysis	65	0.7%
Smoking	678	7.3%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	6,669	71.5%
Prior use of sulfonylurea	1,592	17.1%
Prior use of thiazolidinedione	389	4.2%
Prior use of long/intermediate acting insulin	2,987	32.0%
Prior use of short/rapid acting insulin	2,118	22.7%
Prior use of combination insulin	200	2.1%
Prior use of alpha-glucosidase inhibitor	14	0.2%
Prior use of meglitinides	22	0.2%
Prior use of DPP-4 inhibitors	1,228	13.2%
Prior use of SGLT-2 inhibitors[8]	0	0.0%
Prior use of bromocriptine or colesevelam	24	0.3%

Table 1v. Aggregated Characteristics of SGLT-2 Inhibitor Initiators for the 18–24 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators (ages 18-24 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	16.4	22.0
Mean number of emergency room encounters	1.2	2.7
Mean number of inpatient hospital encounters	0.2	0.8
Mean number of non-acute institutional encounters	0.0	0.2
Mean number of other ambulatory encounters	15.1	47.0
Mean number of filled prescriptions	31.3	32.0
Mean number of generics dispensed	9.2	6.6
Mean number of unique drug classes dispensed	8.0	5.6

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

[5]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. J Gerontol A Biol Sci Med Sci. 2018;73(7)980-987.

[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

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Table 1w. Aggregated Characteristics of DPP-4 Inhibitor Initiators for the 25–34 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitor initiators (ages 25-34 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	54,450	N/A[2]
Demographic Characteristics		
Age (years)	31.3	2.7
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	0	0.0%
25-34 years	54,450	100.0%
35-44 years	0	0.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	30,695	56.4%
Male	23,755	43.6%
Race[3]		
American Indian or Alaska Native	870	1.6%
Asian	2,213	4.1%
Black or African American	8,865	16.3%
Multi-racial	397	0.7%
Native Hawaiian or Other Pacific Islander	248	0.5%
Unknown	24,910	45.7%
White	16,947	31.1%
Hispanic origin[3]		
Yes	8,771	16.1%
No	27,935	51.3%
Unknown	17,744	32.6%
Year		
2008	570	1.0%
2009	1,395	2.6%
2010	1,376	2.5%
2011	2,653	4.9%
2012	2,773	5.1%
2013	2,348	4.3%
2014	2,357	4.3%
2015	3,156	5.8%
2016	4,259	7.8%
2017	7,013	12.9%
2018	6,739	12.4%
2019	6,052	11.1%
2020	5,685	10.4%
2021	6,170	11.3%
2022	973	1.8%
2023	811	1.5%

Table 1w. Aggregated Characteristics of DPP-4 Inhibitor Initiators for the 25–34 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitor initiators (ages 25-34 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2024	120	0.2%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	0.5	1.1
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	40,488	74.4%
1	6,446	11.8%
2	4,173	7.7%
≥3	3,343	6.1%
Claims-Based frailty index[5]	0.1	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	52,958	97.3%
≥0.25 (frail)	1,492	2.7%
Combined comorbidity score[6]	1.1	1.7
Combined comorbidity score categories		
<1	23,294	42.8%
1	15,157	27.8%
2	7,868	14.4%
≥3	8,131	14.9%
T1DM (>50% code days)[7]	712	1.3%
Any T1DM code	4,339	8.0%
Any T2DM code	48,209	88.5%
T2DM (and no T1DM codes)	44,079	81.0%
Obesity	22,215	40.8%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	522	1.0%
Obesity only (no T1DM)	22,025	40.4%
T1DM and Obesity	190	0.3%
Neither T1DM nor Obesity	31,713	58.2%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	25,402	46.7%
Obesity only (no T2DM)	3,538	6.5%
T2DM and Obesity	18,677	34.3%
Neither T2DM nor obesity	6,833	12.5%
Weight loss procedures	101	0.2%
Body mass index (BMI) (kg/m^2)		
BMI <20	128	0.2%
BMI 20-24	347	0.6%
BMI 25-29	1,155	2.1%
BMI 30-39	4,619	8.5%
BMI 40-69	6,281	11.5%
BMI 70+	303	0.6%
Hypertension	23,983	44.0%
Hyperlipidemia	23,184	42.6%
Ischemic heart disease	1,387	2.5%

Table 1w. Aggregated Characteristics of DPP-4 Inhibitor Initiators for the 25–34 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitor initiators (ages 25-34 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Cerebrovascular disease	627	1.2%
Peripheral vascular disease	1,096	2.0%
Heart failure	1,310	2.4%
Obstructive sleep apnea	4,898	9.0%
Chronic kidney disease	20,713	38.0%
Dialysis	670	1.2%
Smoking	8,349	15.3%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	38,943	71.5%
Prior use of sulfonylurea	14,765	27.1%
Prior use of thiazolidinedione	2,775	5.1%
Prior use of long/intermediate acting insulin	10,515	19.3%
Prior use of short/rapid acting insulin	6,315	11.6%
Prior use of combination insulin	1,067	2.0%
Prior use of alpha-glucosidase inhibitor	120	0.2%
Prior use of meglitinides	222	0.4%
Prior use of DPP-4 inhibitors[8]	*****	*****
Prior use of SGLT-2 inhibitors	3,553	6.5%
Prior use of bromocriptine or colesevelam	173	0.3%

Table 1w. Aggregated Characteristics of DPP-4 Inhibitor Initiators for the 25–34 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitor initiators (ages 25-34 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	17.2	25.2
Mean number of emergency room encounters	1.4	3.5
Mean number of inpatient hospital encounters	0.3	1.0
Mean number of non-acute institutional encounters	0.0	0.4
Mean number of other ambulatory encounters	10.7	35.9
Mean number of filled prescriptions	35.4	36.4
Mean number of generics dispensed	10.0	7.3
Mean number of unique drug classes dispensed	8.7	6.1

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

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[8]Identified in the procedure table only.

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Table 1x. Aggregated Characteristics of DPP-4 Inhibitor/SGLT-2 Inhibitor Combination Product Initiators for the 25–34 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators (ages 25-34 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	912	N/A[2]
Demographic Characteristics		
Age (years)	31.3	2.7
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	0	0.0%
25-34 years	912	100.0%
35-44 years	0	0.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	470	51.5%
Male	442	48.5%
Race[3]		
American Indian or Alaska Native	*****	*****
Asian	37	4.1%
Black or African American	133	14.6%
Multi-racial	*****	*****
Native Hawaiian or Other Pacific Islander	*****	*****
Unknown	476	52.2%
White	240	26.3%
Hispanic origin[3]		
Yes	109	12.0%
No	369	40.5%
Unknown	434	47.6%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	0	0.0%
2014	0	0.0%
2015	84	9.2%
2016	113	12.4%
2017	81	8.9%
2018	81	8.9%
2019	133	14.6%
2020	147	16.1%
2021	147	16.1%
2022	77	8.4%

Table 1x. Aggregated Characteristics of DPP-4 Inhibitor/SGLT-2 Inhibitor Combination Product Initiators for the 25–34 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators (ages 25-34 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2023	*****	*****
2024	*****	*****
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	0.5	1.0
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	671	73.6%
1	127	13.9%
2	70	7.7%
≥3	44	4.8%
Claims-Based frailty index[5]	0.1	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	*****	*****
≥0.25 (frail)	*****	*****
Combined comorbidity score[6]	1.1	1.4
Combined comorbidity score categories		
<1	343	37.6%
1	297	32.6%
2	162	17.8%
≥3	110	12.1%
T1DM (>50% code days)[7]	13	1.4%
Any T1DM code	72	7.9%
Any T2DM code	852	93.4%
T2DM (and no T1DM codes)	782	85.7%
Obesity	426	46.7%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	*****	*****
Obesity only (no T1DM)	423	46.4%
T1DM and Obesity	*****	*****
Neither T1DM nor Obesity	476	52.2%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	406	44.5%
Obesity only (no T2DM)	50	5.5%
T2DM and Obesity	376	41.2%
Neither T2DM nor obesity	80	8.8%
Weight loss procedures	0	0.0%
Body mass index (BMI) (kg/m^2)		
BMI <20	*****	*****
BMI 20-24	12	1.3%
BMI 25-29	33	3.6%
BMI 30-39	134	14.7%
BMI 40-69	146	16.0%
BMI 70+	*****	*****
Hypertension	439	48.1%
Hyperlipidemia	464	50.9%

Table 1x. Aggregated Characteristics of DPP-4 Inhibitor/SGLT-2 Inhibitor Combination Product Initiators for the 25–34 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators (ages 25-34 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Ischemic heart disease	15	1.6%
Cerebrovascular disease	*****	*****
Peripheral vascular disease	19	2.1%
Heart failure	16	1.8%
Obstructive sleep apnea	77	8.4%
Chronic kidney disease	506	55.5%
Dialysis	*****	*****
Smoking	111	12.2%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	681	74.7%
Prior use of sulfonylurea	245	26.9%
Prior use of thiazolidinedione	53	5.8%
Prior use of long/intermediate acting insulin	208	22.8%
Prior use of short/rapid acting insulin	121	13.3%
Prior use of combination insulin	17	1.9%
Prior use of alpha-glucosidase inhibitor	*****	*****
Prior use of meglitinides	*****	*****
Prior use of DPP-4 inhibitors	206	22.6%
Prior use of SGLT-2 inhibitors	194	21.3%
Prior use of bromocriptine or colesevelam	*****	*****

Table 1x. Aggregated Characteristics of DPP-4 Inhibitor/SGLT-2 Inhibitor Combination Product Initiators for the 25–34 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators (ages 25-34 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	14.4	17.9
Mean number of emergency room encounters	1.0	2.4
Mean number of inpatient hospital encounters	0.1	0.4
Mean number of non-acute institutional encounters	0.0	0.2
Mean number of other ambulatory encounters	9.2	36.7
Mean number of filled prescriptions	33.3	30.6
Mean number of generics dispensed	9.9	6.4
Mean number of unique drug classes dispensed	8.4	5.3

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

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[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

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Table 1y. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators for the 25–34 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators (ages 25-34 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	14,899	N/A[2]
Demographic Characteristics		
Age (years)	31.2	2.7
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	0	0.0%
25-34 years	14,899	100.0%
35-44 years	0	0.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	10,899	73.2%
Male	4,000	26.8%
Race[3]		
American Indian or Alaska Native	*****	*****
Asian	322	2.2%
Black or African American	1,002	6.7%
Multi-racial	440	3.0%
Native Hawaiian or Other Pacific Islander	*****	*****
Unknown	7,657	51.4%
White	5,420	36.4%
Hispanic origin[3]		
Yes	876	5.9%
No	5,028	33.7%
Unknown	8,995	60.4%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	0	0.0%
2014	0	0.0%
2015	0	0.0%
2016	0	0.0%
2017	0	0.0%
2018	0	0.0%
2019	0	0.0%
2020	0	0.0%
2021	0	0.0%
2022	2,599	17.4%

Table 1y. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators for the 25–34 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators (ages 25-34 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2023	8,337	56.0%
2024	3,963	26.6%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	0.2	0.7
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	13,032	87.5%
1	943	6.3%
2	583	3.9%
≥3	341	2.3%
Claims-Based frailty index[5]	0.1	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	14,806	99.4%
≥0.25 (frail)	93	0.6%
Combined comorbidity score[6]	0.9	1.3
Combined comorbidity score categories		
<1	6,969	46.8%
1	4,304	28.9%
2	2,135	14.3%
≥3	1,491	10.0%
T1DM (>50% code days)[7]	274	1.8%
Any T1DM code	482	3.2%
Any T2DM code	5,852	39.3%
T2DM (and no T1DM codes)	5,510	37.0%
Obesity	10,888	73.1%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	109	0.7%
Obesity only (no T1DM)	10,723	72.0%
T1DM and Obesity	165	1.1%
Neither T1DM nor Obesity	3,902	26.2%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	1,195	8.0%
Obesity only (no T2DM)	6,573	44.1%
T2DM and Obesity	4,315	29.0%
Neither T2DM nor obesity	2,816	18.9%
Weight loss procedures	38	0.3%
Body mass index (BMI) (kg/m^2)		
BMI <20	42	0.3%
BMI 20-24	91	0.6%
BMI 25-29	657	4.4%
BMI 30-39	4,034	27.1%
BMI 40-69	4,973	33.4%
BMI 70+	162	1.1%
Hypertension	4,498	30.2%
Hyperlipidemia	5,339	35.8%

Table 1y. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators for the 25–34 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators (ages 25-34 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Ischemic heart disease	143	1.0%
Cerebrovascular disease	80	0.5%
Peripheral vascular disease	131	0.9%
Heart failure	188	1.3%
Obstructive sleep apnea	1,924	12.9%
Chronic kidney disease	3,232	21.7%
Dialysis	59	0.4%
Smoking	1,303	8.7%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	5,638	37.8%
Prior use of sulfonylurea	652	4.4%
Prior use of thiazolidinedione	202	1.4%
Prior use of long/intermediate acting insulin	1,279	8.6%
Prior use of short/rapid acting insulin	965	6.5%
Prior use of combination insulin	48	0.3%
Prior use of alpha-glucosidase inhibitor	14	0.1%
Prior use of meglitinides	*****	*****
Prior use of DPP-4 inhibitors	215	1.4%
Prior use of SGLT-2 inhibitors	1,095	7.3%
Prior use of bromocriptine or colesevelam	20	0.1%

Table 1y. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators for the 25–34 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators (ages 25-34 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	14.8	16.3
Mean number of emergency room encounters	0.5	1.5
Mean number of inpatient hospital encounters	0.1	0.4
Mean number of non-acute institutional encounters	0.0	0.2
Mean number of other ambulatory encounters	3.9	7.2
Mean number of filled prescriptions	25.0	25.5
Mean number of generics dispensed	8.5	6.1
Mean number of unique drug classes dispensed	7.7	5.4

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

[5]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. J Gerontol A Biol Sci Med Sci. 2018;73(7)980-987.

[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

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

Table 1z. Aggregated Characteristics of GLP-1 Agonist Initiators for the 25–34 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators (ages 25-34 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	135,542	N/A[2]
Demographic Characteristics		
Age (years)	31.1	2.7
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	0	0.0%
25-34 years	135,542	100.0%
35-44 years	0	0.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	97,753	72.1%
Male	37,789	27.9%
Race[3]		
American Indian or Alaska Native	1,373	1.0%
Asian	2,863	2.1%
Black or African American	18,118	13.4%
Multi-racial	2,110	1.6%
Native Hawaiian or Other Pacific Islander	406	0.3%
Unknown	59,125	43.6%
White	51,547	38.0%
Hispanic origin[3]		
Yes	14,058	10.4%
No	66,772	49.3%
Unknown	54,712	40.4%
Year		
2008	218	0.2%
2009	503	0.4%
2010	1,346	1.0%
2011	1,581	1.2%
2012	1,591	1.2%
2013	1,520	1.1%

Table 1z. Aggregated Characteristics of GLP-1 Agonist Initiators for the 25–34 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators (ages 25-34 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2014	1,667	1.2%
2015	2,796	2.1%
2016	4,743	3.5%
2017	7,726	5.7%
2018	9,760	7.2%
2019	11,929	8.8%
2020	13,943	10.3%
2021	26,518	19.6%
2022	16,212	12.0%
2023	30,279	22.3%
2024	3,210	2.4%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	0.4	1.0
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	108,250	79.9%
1	13,126	9.7%
2	8,275	6.1%
≥3	5,891	4.3%
Claims-Based frailty index[5]	0.1	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	133,396	98.4%
≥0.25 (frail)	2,146	1.6%
Combined comorbidity score[6]	1.1	1.4
Combined comorbidity score categories		
<1	56,634	41.8%
1	40,786	30.1%
2	20,510	15.1%
≥3	17,612	13.0%
T1DM (>50% code days)[7]	3,546	2.6%
Any T1DM code	9,205	6.8%
Any T2DM code	74,067	54.6%
T2DM (and no T1DM codes)	66,434	49.0%
Obesity	85,697	63.2%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	1,950	1.4%

Table 1z. Aggregated Characteristics of GLP-1 Agonist Initiators for the 25–34 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators (ages 25-34 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Obesity only (no T1DM)	84,101	62.0%
T1DM and Obesity	1,596	1.2%
Neither T1DM nor Obesity	47,895	35.3%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	27,332	20.2%
Obesity only (no T2DM)	46,595	34.4%
T2DM and Obesity	39,102	28.8%
Neither T2DM nor obesity	22,513	16.6%
Weight loss procedures	255	0.2%
Body mass index (BMI) (kg/m^2)		
BMI <20	268	0.2%
BMI 20-24	493	0.4%
BMI 25-29	3,589	2.6%
BMI 30-39	24,609	18.2%
BMI 40-69	33,307	24.6%
BMI 70+	1,387	1.0%
Hypertension	47,542	35.1%
Hyperlipidemia	45,825	33.8%
Ischemic heart disease	2,318	1.7%
Cerebrovascular disease	1,105	0.8%
Peripheral vascular disease	1,878	1.4%
Heart failure	2,494	1.8%
Obstructive sleep apnea	16,630	12.3%
Chronic kidney disease	41,903	30.9%
Dialysis	845	0.6%
Smoking	17,802	13.1%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	72,871	53.8%
Prior use of sulfonylurea	17,874	13.2%
Prior use of thiazolidinedione	3,988	2.9%
Prior use of long/intermediate acting insulin	26,612	19.6%
Prior use of short/rapid acting insulin	18,228	13.4%
Prior use of combination insulin	2,046	1.5%
Prior use of alpha-glucosidase inhibitor	226	0.2%
Prior use of meglitinides	286	0.2%

Table 1z. Aggregated Characteristics of GLP-1 Agonist Initiators for the 25–34 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators (ages 25-34 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Prior use of DPP-4 inhibitors	11,839	8.7%
Prior use of SGLT-2 inhibitors	10,273	7.6%
Prior use of bromocriptine or colesevelam	341	0.3%
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	17.5	21.6
Mean number of emergency room encounters	1.0	2.5
Mean number of inpatient hospital encounters	0.2	0.7
Mean number of non-acute institutional encounters	0.0	0.2
Mean number of other ambulatory encounters	8.4	27.8
Mean number of filled prescriptions	32.4	33.4
Mean number of generics dispensed	9.8	6.9
Mean number of unique drug classes dispensed	8.7	5.8

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

[5]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. J Gerontol A Biol Sci Med Sci. 2018;73(7)980-987.

[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

Table 1aa. Aggregated Characteristics of SGLT-2 Inhibitor Initiators for the 25–34 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators (ages 25-34 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	53,561	N/A[2]
Demographic Characteristics		
Age (years)	31.3	2.7
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	0	0.0%
25-34 years	53,561	100.0%
35-44 years	0	0.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	29,735	55.5%
Male	23,826	44.5%
Race[3]		
American Indian or Alaska Native	717	1.3%
Asian	2,075	3.9%
Black or African American	8,431	15.7%
Multi-racial	535	1.0%
Native Hawaiian or Other Pacific Islander	260	0.5%
Unknown	23,485	43.8%
White	18,058	33.7%
Hispanic origin[3]		
Yes	8,455	15.8%
No	28,197	52.6%
Unknown	16,909	31.6%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	317	0.6%
2014	1,613	3.0%
2015	2,671	5.0%
2016	3,365	6.3%
2017	5,191	9.7%
2018	5,374	10.0%
2019	6,354	11.9%
2020	8,192	15.3%
2021	12,552	23.4%
2022	3,540	6.6%

Table 1aa. Aggregated Characteristics of SGLT-2 Inhibitor Initiators for the 25–34 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators (ages 25-34 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2023	3,940	7.4%
2024	452	0.8%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	0.7	1.2
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	36,853	68.8%
1	6,783	12.7%
2	5,780	10.8%
≥3	4,145	7.7%
Claims-Based frailty index[5]	0.1	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	52,405	97.8%
≥0.25 (frail)	1,156	2.2%
Combined comorbidity score[6]	1.4	1.8
Combined comorbidity score categories		
<1	18,331	34.2%
1	15,825	29.5%
2	9,266	17.3%
≥3	10,139	18.9%
T1DM (>50% code days)[7]	1,455	2.7%
Any T1DM code	4,693	8.8%
Any T2DM code	45,894	85.7%
T2DM (and no T1DM codes)	41,725	77.9%
Obesity	26,415	49.3%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	1,016	1.9%
Obesity only (no T1DM)	25,976	48.5%
T1DM and Obesity	439	0.8%
Neither T1DM nor Obesity	26,130	48.8%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	20,267	37.8%
Obesity only (no T2DM)	4,957	9.3%
T2DM and Obesity	21,458	40.1%
Neither T2DM nor obesity	6,879	12.8%
Weight loss procedures	71	0.1%
Body mass index (BMI) (kg/m^2)		
BMI <20	111	0.2%
BMI 20-24	356	0.7%
BMI 25-29	1,398	2.6%
BMI 30-39	6,780	12.7%
BMI 40-69	9,515	17.8%
BMI 70+	429	0.8%
Hypertension	24,846	46.4%
Hyperlipidemia	23,575	44.0%

Table 1aa. Aggregated Characteristics of SGLT-2 Inhibitor Initiators for the 25–34 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators (ages 25-34 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Ischemic heart disease	2,035	3.8%
Cerebrovascular disease	655	1.2%
Peripheral vascular disease	1,051	2.0%
Heart failure	3,443	6.4%
Obstructive sleep apnea	6,317	11.8%
Chronic kidney disease	27,691	51.7%
Dialysis	403	0.8%
Smoking	8,318	15.5%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	38,741	72.3%
Prior use of sulfonylurea	12,605	23.5%
Prior use of thiazolidinedione	2,518	4.7%
Prior use of long/intermediate acting insulin	14,861	27.7%
Prior use of short/rapid acting insulin	9,558	17.8%
Prior use of combination insulin	1,207	2.3%
Prior use of alpha-glucosidase inhibitor	123	0.2%
Prior use of meglitinides	195	0.4%
Prior use of DPP-4 inhibitors	9,226	17.2%
Prior use of SGLT-2 inhibitors[8]	*****	*****
Prior use of bromocriptine or colesevelam	171	0.3%

Table 1aa. Aggregated Characteristics of SGLT-2 Inhibitor Initiators for the 25–34 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators (ages 25-34 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	17.0	22.0
Mean number of emergency room encounters	1.3	3.1
Mean number of inpatient hospital encounters	0.3	0.9
Mean number of non-acute institutional encounters	0.0	0.3
Mean number of other ambulatory encounters	11.2	36.5
Mean number of filled prescriptions	38.3	37.7
Mean number of generics dispensed	10.6	7.2
Mean number of unique drug classes dispensed	9.2	6.1

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

[5]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. J Gerontol A Biol Sci Med Sci. 2018;73(7)980-987.

[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

[8]Identified in the procedure table only.

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

Table 1ab. Aggregated Characteristics of DPP-4 Inhibitor Initiators for the 35–44 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitor initiators (ages 35-44 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	184,800	N/A[2]
Demographic Characteristics		
Age (years)	40.8	2.8
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	0	0.0%
25-34 years	0	0.0%
35-44 years	184,800	100.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	92,734	50.2%
Male	92,066	49.8%
Race[3]		
American Indian or Alaska Native	2,244	1.2%
Asian	6,930	3.8%
Black or African American	26,260	14.2%
Multi-racial	1,432	0.8%
Native Hawaiian or Other Pacific Islander	677	0.4%
Unknown	85,481	46.3%
White	61,776	33.4%
Hispanic origin[3]		
Yes	21,103	11.4%
No	92,076	49.8%
Unknown	71,621	38.8%
Year		
2008	2,756	1.5%
2009	6,251	3.4%
2010	6,446	3.5%
2011	11,951	6.5%
2012	11,469	6.2%
2013	9,650	5.2%
2014	10,128	5.5%
2015	12,054	6.5%
2016	14,777	8.0%
2017	21,172	11.5%
2018	20,569	11.1%
2019	17,737	9.6%
2020	16,122	8.7%
2021	17,126	9.3%
2022	3,519	1.9%
2023	2,646	1.4%

Table 1ab. Aggregated Characteristics of DPP-4 Inhibitor Initiators for the 35–44 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitor initiators (ages 35-44 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2024	427	0.2%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	0.8	1.4
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	121,645	65.8%
1	28,497	15.4%
2	17,024	9.2%
≥3	17,634	9.5%
Claims-Based frailty index[5]	0.1	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	177,874	96.3%
≥0.25 (frail)	6,926	3.7%
Combined comorbidity score[6]	1.1	1.9
Combined comorbidity score categories		
<1	87,325	47.3%
1	44,677	24.2%
2	23,255	12.6%
≥3	29,543	16.0%
T1DM (>50% code days)[7]	1,640	0.9%
Any T1DM code	12,882	7.0%
Any T2DM code	168,586	91.2%
T2DM (and no T1DM codes)	156,103	84.5%
Obesity	67,099	36.3%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	1,183	0.6%
Obesity only (no T1DM)	66,642	36.1%
T1DM and Obesity	457	0.2%
Neither T1DM nor Obesity	116,518	63.1%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	98,003	53.0%
Obesity only (no T2DM)	8,999	4.9%
T2DM and Obesity	58,100	31.4%
Neither T2DM nor obesity	19,698	10.7%
Weight loss procedures	456	0.2%
Body mass index (BMI) (kg/m^2)		
BMI <20	321	0.2%
BMI 20-24	1,100	0.6%
BMI 25-29	4,261	2.3%
BMI 30-39	16,810	9.1%
BMI 40-69	18,225	9.9%
BMI 70+	691	0.4%
Hypertension	108,108	58.5%
Hyperlipidemia	103,385	55.9%
Ischemic heart disease	11,256	6.1%

Table 1ab. Aggregated Characteristics of DPP-4 Inhibitor Initiators for the 35–44 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitor initiators (ages 35-44 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Cerebrovascular disease	3,853	2.1%
Peripheral vascular disease	7,114	3.8%
Heart failure	7,648	4.1%
Obstructive sleep apnea	22,121	12.0%
Chronic kidney disease	65,370	35.4%
Dialysis	2,975	1.6%
Smoking	32,576	17.6%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	131,810	71.3%
Prior use of sulfonylurea	57,465	31.1%
Prior use of thiazolidinedione	13,269	7.2%
Prior use of long/intermediate acting insulin	32,564	17.6%
Prior use of short/rapid acting insulin	18,291	9.9%
Prior use of combination insulin	3,912	2.1%
Prior use of alpha-glucosidase inhibitor	489	0.3%
Prior use of meglitinides	1,093	0.6%
Prior use of DPP-4 inhibitors[8]	36	0.0%
Prior use of SGLT-2 inhibitors	13,233	7.2%
Prior use of bromocriptine or colesevelam	939	0.5%

Table 1ab. Aggregated Characteristics of DPP-4 Inhibitor Initiators for the 35–44 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitor initiators (ages 35-44 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	17.2	24.5
Mean number of emergency room encounters	1.1	2.9
Mean number of inpatient hospital encounters	0.2	0.9
Mean number of non-acute institutional encounters	0.0	0.4
Mean number of other ambulatory encounters	8.1	27.0
Mean number of filled prescriptions	42.1	39.6
Mean number of generics dispensed	10.7	7.3
Mean number of unique drug classes dispensed	9.3	6.2

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

[5]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. J Gerontol A Biol Sci Med Sci. 2018;73(7)980-987.

[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

[8]Identified in the procedure table only.

Table 1ac. Aggregated Characteristics of DPP-4 Inhibitor/SGLT-2 Inhibitor Combination Product Initiators for the 35–44 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators (ages 35-44 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	3,612	N/A[2]
Demographic Characteristics		
Age (years)	40.9	2.8
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	0	0.0%
25-34 years	0	0.0%
35-44 years	3,612	100.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	1,642	45.5%
Male	1,970	54.5%
Race[3]		
American Indian or Alaska Native	*****	*****
Asian	129	3.6%
Black or African American	417	11.5%
Multi-racial	48	1.3%
Native Hawaiian or Other Pacific Islander	*****	*****
Unknown	1,855	51.4%
White	1,143	31.6%
Hispanic origin[3]		
Yes	305	8.4%
No	1,478	40.9%
Unknown	1,829	50.6%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	0	0.0%
2014	0	0.0%
2015	420	11.6%
2016	489	13.5%
2017	341	9.4%
2018	299	8.3%
2019	524	14.5%
2020	443	12.3%
2021	594	16.4%
2022	282	7.8%

Table 1ac. Aggregated Characteristics of DPP-4 Inhibitor/SGLT-2 Inhibitor Combination Product Initiators for the 35–44 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators (ages 35-44 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2023	192	5.3%
2024	28	0.8%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	0.7	1.2
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	2,349	65.0%
1	613	17.0%
2	360	10.0%
≥3	290	8.0%
Claims-Based frailty index[5]	0.1	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	3,533	97.8%
≥0.25 (frail)	79	2.2%
Combined comorbidity score[6]	1.0	1.6
Combined comorbidity score categories		
<1	1,578	43.7%
1	996	27.6%
2	519	14.4%
≥3	519	14.4%
T1DM (>50% code days)[7]	29	0.8%
Any T1DM code	195	5.4%
Any T2DM code	3,398	94.1%
T2DM (and no T1DM codes)	3,209	88.8%
Obesity	1,616	44.7%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	*****	*****
Obesity only (no T1DM)	1,609	44.5%
T1DM and Obesity	*****	*****
Neither T1DM nor Obesity	1,974	54.7%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	1,725	47.8%
Obesity only (no T2DM)	132	3.7%
T2DM and Obesity	1,484	41.1%
Neither T2DM nor obesity	271	7.5%
Weight loss procedures	*****	*****
Body mass index (BMI) (kg/m^2)		
BMI <20	*****	*****
BMI 20-24	28	0.8%
BMI 25-29	146	4.0%
BMI 30-39	597	16.5%
BMI 40-69	497	13.8%
BMI 70+	17	0.5%
Hypertension	2,267	62.8%
Hyperlipidemia	2,331	64.5%

Table 1ac. Aggregated Characteristics of DPP-4 Inhibitor/SGLT-2 Inhibitor Combination Product Initiators for the 35–44 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators (ages 35-44 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Ischemic heart disease	191	5.3%
Cerebrovascular disease	59	1.6%
Peripheral vascular disease	126	3.5%
Heart failure	114	3.2%
Obstructive sleep apnea	457	12.7%
Chronic kidney disease	1,930	53.4%
Dialysis	*****	*****
Smoking	587	16.3%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	2,661	73.7%
Prior use of sulfonylurea	1,050	29.1%
Prior use of thiazolidinedione	271	7.5%
Prior use of long/intermediate acting insulin	810	22.4%
Prior use of short/rapid acting insulin	408	11.3%
Prior use of combination insulin	62	1.7%
Prior use of alpha-glucosidase inhibitor	*****	*****
Prior use of meglitinides	19	0.5%
Prior use of DPP-4 inhibitors	916	25.4%
Prior use of SGLT-2 inhibitors	957	26.5%
Prior use of bromocriptine or colesevelam	21	0.6%

Table 1ac. Aggregated Characteristics of DPP-4 Inhibitor/SGLT-2 Inhibitor Combination Product Initiators for the 35–44 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators (ages 35-44 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	14.4	19.1
Mean number of emergency room encounters	0.8	1.8
Mean number of inpatient hospital encounters	0.1	0.5
Mean number of non-acute institutional encounters	0.0	0.2
Mean number of other ambulatory encounters	5.9	22.9
Mean number of filled prescriptions	39.5	34.9
Mean number of generics dispensed	10.7	6.9
Mean number of unique drug classes dispensed	9.1	5.7

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

[5]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. J Gerontol A Biol Sci Med Sci. 2018;73(7)980-987.

[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

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

Table 1ad. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators for the 35–44 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators (ages 35-44 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	45,355	N/A[2]
Demographic Characteristics		
Age (years)	40.7	2.8
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	0	0.0%
25-34 years	0	0.0%
35-44 years	45,355	100.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	30,796	67.9%
Male	14,559	32.1%
Race[3]		
American Indian or Alaska Native	143	0.3%
Asian	873	1.9%
Black or African American	3,562	7.9%
Multi-racial	1,252	2.8%
Native Hawaiian or Other Pacific Islander	28	0.1%
Unknown	22,220	49.0%
White	17,277	38.1%
Hispanic origin[3]		
Yes	2,368	5.2%
No	16,955	37.4%
Unknown	26,032	57.4%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	0	0.0%
2014	0	0.0%
2015	0	0.0%
2016	0	0.0%
2017	0	0.0%
2018	0	0.0%
2019	0	0.0%
2020	0	0.0%
2021	0	0.0%
2022	8,414	18.6%
2023	26,834	59.2%

Table 1ad. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators for the 35–44 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators (ages 35-44 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2024	10,107	22.3%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	0.4	1.0
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	35,427	78.1%
1	4,750	10.5%
2	2,890	6.4%
≥3	2,288	5.0%
Claims-Based frailty index[5]	0.1	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	44,698	98.6%
≥0.25 (frail)	657	1.4%
Combined comorbidity score[6]	1.0	1.6
Combined comorbidity score categories		
<1	21,358	47.1%
1	12,306	27.1%
2	5,931	13.1%
≥3	5,760	12.7%
T1DM (>50% code days)[7]	546	1.2%
Any T1DM code	1,246	2.7%
Any T2DM code	24,367	53.7%
T2DM (and no T1DM codes)	23,375	51.5%
Obesity	32,451	71.5%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	201	0.4%
Obesity only (no T1DM)	32,106	70.8%
T1DM and Obesity	345	0.8%
Neither T1DM nor Obesity	12,703	28.0%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	6,077	13.4%
Obesity only (no T2DM)	15,153	33.4%
T2DM and Obesity	17,298	38.1%
Neither T2DM nor obesity	6,827	15.1%
Weight loss procedures	141	0.3%
Body mass index (BMI) (kg/m^2)		
BMI <20	132	0.3%
BMI 20-24	335	0.7%
BMI 25-29	2,153	4.7%
BMI 30-39	13,050	28.8%
BMI 40-69	13,694	30.2%
BMI 70+	416	0.9%
Hypertension	21,928	48.3%
Hyperlipidemia	22,987	50.7%
Ischemic heart disease	1,498	3.3%

Table 1ad. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators for the 35–44 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators (ages 35-44 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Cerebrovascular disease	478	1.1%
Peripheral vascular disease	1,002	2.2%
Heart failure	1,137	2.5%
Obstructive sleep apnea	8,620	19.0%
Chronic kidney disease	13,282	29.3%
Dialysis	330	0.7%
Smoking	5,797	12.8%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	19,348	42.7%
Prior use of sulfonylurea	3,485	7.7%
Prior use of thiazolidinedione	1,105	2.4%
Prior use of long/intermediate acting insulin	5,086	11.2%
Prior use of short/rapid acting insulin	3,522	7.8%
Prior use of combination insulin	227	0.5%
Prior use of alpha-glucosidase inhibitor	59	0.1%
Prior use of meglitinides	74	0.2%
Prior use of DPP-4 inhibitors	1,397	3.1%
Prior use of SGLT-2 inhibitors	5,956	13.1%
Prior use of bromocriptine or colesevelam	98	0.2%

Table 1ad. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators for the 35–44 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators (ages 35-44 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	16.1	18.5
Mean number of emergency room encounters	0.5	1.5
Mean number of inpatient hospital encounters	0.1	0.4
Mean number of non-acute institutional encounters	0.0	0.2
Mean number of other ambulatory encounters	4.1	7.4
Mean number of filled prescriptions	33.3	31.8
Mean number of generics dispensed	10.0	6.7
Mean number of unique drug classes dispensed	8.9	5.8

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

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[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

Table 1ae. Aggregated Characteristics of GLP-1 Agonist Initiators for the 35–44 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators (ages 35-44 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	364,861	N/A[2]
Demographic Characteristics		
Age (years)	40.6	2.8
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	0	0.0%
25-34 years	0	0.0%
35-44 years	364,861	100.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	237,681	65.1%
Male	127,180	34.9%
Race[3]		
American Indian or Alaska Native	3,613	1.0%
Asian	7,389	2.0%
Black or African American	45,354	12.4%
Multi-racial	5,417	1.5%
Native Hawaiian or Other Pacific Islander	901	0.2%
Unknown	156,065	42.8%
White	146,122	40.0%
Hispanic origin[3]		
Yes	30,144	8.3%
No	182,127	49.9%
Unknown	152,590	41.8%
Year		
2008	819	0.2%
2009	1,697	0.5%
2010	5,581	1.5%
2011	6,264	1.7%
2012	6,083	1.7%
2013	6,297	1.7%
2014	6,305	1.7%
2015	9,984	2.7%
2016	15,014	4.1%
2017	22,309	6.1%
2018	27,457	7.5%
2019	32,752	9.0%
2020	36,158	9.9%
2021	61,435	16.8%
2022	44,845	12.3%
2023	74,304	20.4%

Table 1ae. Aggregated Characteristics of GLP-1 Agonist Initiators for the 35–44 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators (ages 35-44 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2024	7,557	2.1%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	0.6	1.3
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	255,207	69.9%
1	50,434	13.8%
2	29,605	8.1%
≥3	29,615	8.1%
Claims-Based frailty index[5]	0.1	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	355,127	97.3%
≥0.25 (frail)	9,734	2.7%
Combined comorbidity score[6]	1.1	1.7
Combined comorbidity score categories		
<1	159,791	43.8%
1	97,837	26.8%
2	51,113	14.0%
≥3	56,120	15.4%
T1DM (>50% code days)[7]	5,387	1.5%
Any T1DM code	21,006	5.8%
Any T2DM code	241,757	66.3%
T2DM (and no T1DM codes)	222,767	61.1%
Obesity	215,549	59.1%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	2,882	0.8%
Obesity only (no T1DM)	213,044	58.4%
T1DM and Obesity	2,505	0.7%
Neither T1DM nor Obesity	146,430	40.1%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	100,896	27.7%
Obesity only (no T2DM)	93,678	25.7%
T2DM and Obesity	121,871	33.4%
Neither T2DM nor obesity	48,416	13.3%
Weight loss procedures	790	0.2%
Body mass index (BMI) (kg/m^2)		
BMI <20	597	0.2%
BMI 20-24	1,525	0.4%
BMI 25-29	11,244	3.1%
BMI 30-39	69,273	19.0%
BMI 40-69	78,186	21.4%
BMI 70+	2,790	0.8%
Hypertension	191,909	52.6%
Hyperlipidemia	179,412	49.2%
Ischemic heart disease	17,347	4.8%

Table 1ae. Aggregated Characteristics of GLP-1 Agonist Initiators for the 35–44 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators (ages 35-44 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Cerebrovascular disease	5,839	1.6%
Peripheral vascular disease	10,964	3.0%
Heart failure	12,914	3.5%
Obstructive sleep apnea	62,561	17.1%
Chronic kidney disease	127,769	35.0%
Dialysis	3,573	1.0%
Smoking	61,497	16.9%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	209,552	57.4%
Prior use of sulfonylurea	67,605	18.5%
Prior use of thiazolidinedione	16,760	4.6%
Prior use of long/intermediate acting insulin	78,272	21.5%
Prior use of short/rapid acting insulin	49,425	13.5%
Prior use of combination insulin	6,986	1.9%
Prior use of alpha-glucosidase inhibitor	891	0.2%
Prior use of meglitinides	1,423	0.4%
Prior use of DPP-4 inhibitors	47,338	13.0%
Prior use of SGLT-2 inhibitors	40,037	11.0%
Prior use of bromocriptine or colesevelam	1,315	0.4%

Table 1ae. Aggregated Characteristics of GLP-1 Agonist Initiators for the 35–44 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators (ages 35-44 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	18.0	21.8
Mean number of emergency room encounters	0.9	2.4
Mean number of inpatient hospital encounters	0.2	0.6
Mean number of non-acute institutional encounters	0.0	0.2
Mean number of other ambulatory encounters	7.3	22.9
Mean number of filled prescriptions	41.0	38.1
Mean number of generics dispensed	11.0	7.1
Mean number of unique drug classes dispensed	9.6	6.0

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

[5]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. J Gerontol A Biol Sci Med Sci. 2018;73(7)980-987.

[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

Table 1af. Aggregated Characteristics of SGLT-2 Inhibitor Initiators for the 35–44 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators (ages 35-44 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	185,470	N/A[2]
Demographic Characteristics		
Age (years)	40.8	2.8
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	0	0.0%
25-34 years	0	0.0%
35-44 years	185,470	100.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	91,752	49.5%
Male	93,718	50.5%
Race[3]		
American Indian or Alaska Native	1,978	1.1%
Asian	7,063	3.8%
Black or African American	25,291	13.6%
Multi-racial	1,866	1.0%
Native Hawaiian or Other Pacific Islander	745	0.4%
Unknown	81,302	43.8%
White	67,225	36.2%
Hispanic origin[3]		
Yes	21,554	11.6%
No	95,781	51.6%
Unknown	68,135	36.7%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	1,784	1.0%
2014	8,046	4.3%
2015	12,289	6.6%
2016	13,010	7.0%
2017	17,892	9.6%
2018	17,890	9.6%
2019	21,075	11.4%
2020	25,949	14.0%
2021	37,076	20.0%
2022	14,007	7.6%

Table 1af. Aggregated Characteristics of SGLT-2 Inhibitor Initiators for the 35–44 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators (ages 35-44 years)	
Patient Characteristics	Number/Mean	Percent/ Standard Deviation[1]
2023	14,495	7.8%
2024	1,957	1.1%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	0.9	1.4
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	111,773	60.3%
1	30,590	16.5%
2	21,612	11.7%
≥3	21,495	11.6%
Claims-Based frailty index[5]	0.1	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	179,506	96.8%
≥0.25 (frail)	5,964	3.2%
Combined comorbidity score[6]	1.4	1.9
Combined comorbidity score categories		
<1	70,957	38.3%
1	49,230	26.5%
2	27,981	15.1%
≥3	37,302	20.1%
T1DM (>50% code days)[7]	2,640	1.4%
Any T1DM code	12,192	6.6%
Any T2DM code	166,289	89.7%
T2DM (and no T1DM codes)	154,930	83.5%
Obesity	85,989	46.4%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	1,738	0.9%
Obesity only (no T1DM)	85,087	45.9%
T1DM and Obesity	902	0.5%
Neither T1DM nor Obesity	97,743	52.7%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	81,736	44.1%
Obesity only (no T2DM)	12,795	6.9%
T2DM and Obesity	73,194	39.5%
Neither T2DM nor obesity	17,745	9.6%
Weight loss procedures	306	0.2%
Body mass index (BMI) (kg/m^2)		
BMI <20	390	0.2%
BMI 20-24	1,380	0.7%
BMI 25-29	5,992	3.2%
BMI 30-39	26,764	14.4%
BMI 40-69	29,473	15.9%
BMI 70+	1,070	0.6%
Hypertension	113,090	61.0%
Hyperlipidemia	107,140	57.8%

Table 1af. Aggregated Characteristics of SGLT-2 Inhibitor Initiators for the 35–44 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators (ages 35-44 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Ischemic heart disease	14,594	7.9%
Cerebrovascular disease	3,922	2.1%
Peripheral vascular disease	6,831	3.7%
Heart failure	14,562	7.9%
Obstructive sleep apnea	29,035	15.7%
Chronic kidney disease	93,973	50.7%
Dialysis	1,459	0.8%
Smoking	35,619	19.2%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	136,763	73.7%
Prior use of sulfonylurea	51,029	27.5%
Prior use of thiazolidinedione	10,755	5.8%
Prior use of long/intermediate acting insulin	50,641	27.3%
Prior use of short/rapid acting insulin	30,252	16.3%
Prior use of combination insulin	4,484	2.4%
Prior use of alpha-glucosidase inhibitor	573	0.3%
Prior use of meglitinides	982	0.5%
Prior use of DPP-4 inhibitors	37,909	20.4%
Prior use of SGLT-2 inhibitors[8]	20	0.0%
Prior use of bromocriptine or colesevelam	795	0.4%

Table 1af. Aggregated Characteristics of SGLT-2 Inhibitor Initiators for the 35–44 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators (ages 35-44 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	16.7	19.7
Mean number of emergency room encounters	1.1	2.7
Mean number of inpatient hospital encounters	0.2	0.8
Mean number of non-acute institutional encounters	0.0	0.2
Mean number of other ambulatory encounters	8.5	27.5
Mean number of filled prescriptions	45.8	41.1
Mean number of generics dispensed	11.5	7.4
Mean number of unique drug classes dispensed	9.9	6.2

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

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[8]Identified in the procedure table only.

Table 1ag. Aggregated Characteristics of DPP-4 Inhibitor Initiators for the 45–64 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitor initiators (ages 45-64 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	1,036,762	N/A[2]
Demographic Characteristics		
Age (years)	56.2	5.4
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	0	0.0%
25-34 years	0	0.0%
35-44 years	0	0.0%
45-54 years	422,527	40.8%
55-64 years	614,235	59.2%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	511,861	49.4%
Male	524,901	50.6%
Race[3]		
American Indian or Alaska Native	9,099	0.9%
Asian	38,902	3.8%
Black or African American	141,619	13.7%
Multi-racial	5,698	0.5%
Native Hawaiian or Other Pacific Islander	2,885	0.3%
Unknown	443,593	42.8%
White	394,966	38.1%
Hispanic origin[3]		
Yes	98,857	9.5%
No	551,037	53.1%
Unknown	386,868	37.3%
Year		
2008	16,396	1.6%
2009	32,478	3.1%
2010	33,423	3.2%
2011	74,252	7.2%
2012	71,949	6.9%
2013	59,231	5.7%
2014	62,809	6.1%
2015	73,039	7.0%
2016	82,679	8.0%
2017	113,329	10.9%
2018	107,553	10.4%
2019	96,321	9.3%
2020	82,499	8.0%
2021	82,535	8.0%
2022	25,051	2.4%

Table 1ag. Aggregated Characteristics of DPP-4 Inhibitor Initiators for the 45–64 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitor initiators (ages 45-64 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2023	20,024	1.9%
2024	3,194	0.3%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	1.4	1.8
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	486,374	46.9%
1	191,431	18.5%
2	141,563	13.7%
≥3	217,394	21.0%
Claims-Based frailty index[5]	0.2	0.1
Claims-Based frailty index categories		
<0.25 (not frail)	962,046	92.8%
≥0.25 (frail)	74,716	7.2%
Combined comorbidity score[6]	1.6	2.4
Combined comorbidity score categories		
<1	454,121	43.8%
1	205,850	19.9%
2	123,983	12.0%
≥3	252,808	24.4%
T1DM (>50% code days)[7]	6,491	0.6%
Any T1DM code	79,033	7.6%
Any T2DM code	978,441	94.4%
T2DM (and no T1DM codes)	900,785	86.9%
Obesity	324,237	31.3%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	4,960	0.5%
Obesity only (no T1DM)	322,706	31.1%
T1DM and Obesity	1,531	0.1%
Neither T1DM nor Obesity	707,565	68.2%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	616,988	59.5%
Obesity only (no T2DM)	40,440	3.9%
T2DM and Obesity	283,797	27.4%
Neither T2DM nor obesity	95,537	9.2%
Weight loss procedures	2,727	0.3%
Body mass index (BMI) (kg/m^2)		
BMI <20	2,749	0.3%
BMI 20-24	10,626	1.0%
BMI 25-29	38,943	3.8%
BMI 30-39	106,901	10.3%
BMI 40-69	75,895	7.3%
BMI 70+	1,856	0.2%
Hypertension	795,979	76.8%
Hyperlipidemia	732,976	70.7%

Table 1ag. Aggregated Characteristics of DPP-4 Inhibitor Initiators for the 45–64 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitor initiators (ages 45-64 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Ischemic heart disease	185,531	17.9%
Cerebrovascular disease	52,990	5.1%
Peripheral vascular disease	107,699	10.4%
Heart failure	97,857	9.4%
Obstructive sleep apnea	136,224	13.1%
Chronic kidney disease	402,083	38.8%
Dialysis	22,740	2.2%
Smoking	208,591	20.1%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	744,352	71.8%
Prior use of sulfonylurea	390,186	37.6%
Prior use of thiazolidinedione	102,296	9.9%
Prior use of long/intermediate acting insulin	195,905	18.9%
Prior use of short/rapid acting insulin	106,252	10.2%
Prior use of combination insulin	29,482	2.8%
Prior use of alpha-glucosidase inhibitor	4,334	0.4%
Prior use of meglitinides	10,488	1.0%
Prior use of DPP-4 inhibitors[8]	421	0.0%
Prior use of SGLT-2 inhibitors	78,960	7.6%
Prior use of bromocriptine or colesevelam	7,144	0.7%

Table 1ag. Aggregated Characteristics of DPP-4 Inhibitor Initiators for the 45–64 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitor initiators (ages 45-64 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	19.5	25.8
Mean number of emergency room encounters	0.8	2.2
Mean number of inpatient hospital encounters	0.3	1.0
Mean number of non-acute institutional encounters	0.1	0.5
Mean number of other ambulatory encounters	10.2	30.5
Mean number of filled prescriptions	53.5	43.2
Mean number of generics dispensed	12.0	7.2
Mean number of unique drug classes dispensed	10.5	6.1

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

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[8]Identified in the procedure table only.

Table 1ah. Aggregated Characteristics of DPP-4 Inhibitor/SGLT-2 Inhibitor Combination Product Initiators for the 45–64 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators (ages 45-64 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	20,371	N/A[2]
Demographic Characteristics		
Age (years)	56.0	5.4
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	0	0.0%
25-34 years	0	0.0%
35-44 years	0	0.0%
45-54 years	8,482	41.6%
55-64 years	11,889	58.4%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	8,950	43.9%
Male	11,421	56.1%
Race[3]		
American Indian or Alaska Native	66	0.3%
Asian	525	2.6%
Black or African American	2,307	11.3%
Multi-racial	231	1.1%
Native Hawaiian or Other Pacific Islander	15	0.1%
Unknown	9,836	48.3%
White	7,391	36.3%
Hispanic origin[3]		
Yes	1,413	6.9%
No	8,867	43.5%
Unknown	10,091	49.5%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	0	0.0%
2014	0	0.0%
2015	2,341	11.5%
2016	2,749	13.5%
2017	1,870	9.2%
2018	1,735	8.5%
2019	2,651	13.0%
2020	2,483	12.2%
2021	3,150	15.5%
2022	1,889	9.3%
2023	1,310	6.4%

Table 1ah. Aggregated Characteristics of DPP-4 Inhibitor/SGLT-2 Inhibitor Combination Product Initiators for the 45–64 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators (ages 45-64 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2024	193	0.9%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	1.2	1.6
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	9,943	48.8%
1	4,113	20.2%
2	2,799	13.7%
≥3	3,516	17.3%
Claims-Based frailty index[5]	0.1	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	19,595	96.2%
≥0.25 (frail)	776	3.8%
Combined comorbidity score[6]	1.4	2.0
Combined comorbidity score categories		
<1	8,646	42.4%
1	4,689	23.0%
2	2,842	14.0%
≥3	4,194	20.6%
T1DM (>50% code days)[7]	94	0.5%
Any T1DM code	1,061	5.2%
Any T2DM code	19,699	96.7%
T2DM (and no T1DM codes)	18,658	91.6%
Obesity	8,271	40.6%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	75	0.4%
Obesity only (no T1DM)	8,252	40.5%
T1DM and Obesity	19	0.1%
Neither T1DM nor Obesity	12,025	59.0%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	10,998	54.0%
Obesity only (no T2DM)	611	3.0%
T2DM and Obesity	7,660	37.6%
Neither T2DM nor obesity	1,102	5.4%
Weight loss procedures	32	0.2%
Body mass index (BMI) (kg/m^2)		
BMI <20	47	0.2%
BMI 20-24	389	1.9%
BMI 25-29	1,459	7.2%
BMI 30-39	3,935	19.3%
BMI 40-69	1,950	9.6%
BMI 70+	28	0.1%
Hypertension	16,020	78.6%
Hyperlipidemia	15,865	77.9%
Ischemic heart disease	3,213	15.8%

Table 1ah. Aggregated Characteristics of DPP-4 Inhibitor/SGLT-2 Inhibitor Combination Product Initiators for the 45–64 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators (ages 45-64 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Cerebrovascular disease	715	3.5%
Peripheral vascular disease	1,881	9.2%
Heart failure	1,328	6.5%
Obstructive sleep apnea	2,995	14.7%
Chronic kidney disease	11,340	55.7%
Dialysis	109	0.5%
Smoking	3,691	18.1%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	15,284	75.0%
Prior use of sulfonylurea	7,104	34.9%
Prior use of thiazolidinedione	1,937	9.5%
Prior use of long/intermediate acting insulin	4,761	23.4%
Prior use of short/rapid acting insulin	2,319	11.4%
Prior use of combination insulin	531	2.6%
Prior use of alpha-glucosidase inhibitor	94	0.5%
Prior use of meglitinides	195	1.0%
Prior use of DPP-4 inhibitors	6,191	30.4%
Prior use of SGLT-2 inhibitors	6,373	31.3%
Prior use of bromocriptine or colesevelam	163	0.8%

Table 1ah. Aggregated Characteristics of DPP-4 Inhibitor/SGLT-2 Inhibitor Combination Product Initiators for the 45–64 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators (ages 45-64 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	16.4	17.9
Mean number of emergency room encounters	0.6	2.0
Mean number of inpatient hospital encounters	0.2	0.6
Mean number of non-acute institutional encounters	0.0	0.2
Mean number of other ambulatory encounters	6.8	25.5
Mean number of filled prescriptions	49.6	38.6
Mean number of generics dispensed	12.1	6.9
Mean number of unique drug classes dispensed	10.2	5.8

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

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[5]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. J Gerontol A Biol Sci Med Sci. 2018;73(7)980-987.

[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

Table 1ai. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators for the 45–64 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators (ages 45-64 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	178,931	N/A[2]
Demographic Characteristics		
Age (years)	55.4	5.4
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	0	0.0%
25-34 years	0	0.0%
35-44 years	0	0.0%
45-54 years	84,786	47.4%
55-64 years	94,145	52.6%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	110,509	61.8%
Male	68,422	38.2%
Race[3]		
American Indian or Alaska Native	579	0.3%
Asian	2,093	1.2%
Black or African American	15,848	8.9%
Multi-racial	3,540	2.0%
Native Hawaiian or Other Pacific Islander	132	0.1%
Unknown	75,849	42.4%
White	80,890	45.2%
Hispanic origin[3]		
Yes	6,555	3.7%
No	81,928	45.8%
Unknown	90,448	50.5%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	0	0.0%
2014	0	0.0%
2015	0	0.0%
2016	0	0.0%
2017	0	0.0%
2018	0	0.0%
2019	0	0.0%
2020	0	0.0%
2021	0	0.0%
2022	30,599	17.1%

Table 1ai. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators for the 45–64 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators (ages 45-64 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2023	113,253	63.3%
2024	35,079	19.6%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	1.1	1.6
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	97,648	54.6%
1	30,957	17.3%
2	22,061	12.3%
≥3	28,265	15.8%
Claims-Based frailty index[5]	0.2	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	171,423	95.8%
≥0.25 (frail)	7,508	4.2%
Combined comorbidity score[6]	1.5	2.0
Combined comorbidity score categories		
<1	71,973	40.2%
1	41,348	23.1%
2	25,049	14.0%
≥3	40,561	22.7%
T1DM (>50% code days)[7]	1,254	0.7%
Any T1DM code	5,338	3.0%
Any T2DM code	134,010	74.9%
T2DM (and no T1DM codes)	129,037	72.1%
Obesity	122,797	68.6%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	483	0.3%
Obesity only (no T1DM)	122,026	68.2%
T1DM and Obesity	771	0.4%
Neither T1DM nor Obesity	55,651	31.1%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	40,351	22.6%
Obesity only (no T2DM)	34,111	19.1%
T2DM and Obesity	88,686	49.6%
Neither T2DM nor obesity	15,783	8.8%
Weight loss procedures	408	0.2%
Body mass index (BMI) (kg/m^2)		
BMI <20	453	0.3%
BMI 20-24	1,481	0.8%
BMI 25-29	10,861	6.1%
BMI 30-39	56,459	31.6%
BMI 40-69	45,386	25.4%
BMI 70+	884	0.5%
Hypertension	131,109	73.3%
Hyperlipidemia	133,049	74.4%

Table 1ai. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators for the 45–64 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators (ages 45-64 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Ischemic heart disease	25,085	14.0%
Cerebrovascular disease	4,719	2.6%
Peripheral vascular disease	14,044	7.8%
Heart failure	12,670	7.1%
Obstructive sleep apnea	49,505	27.7%
Chronic kidney disease	78,403	43.8%
Dialysis	1,793	1.0%
Smoking	32,009	17.9%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	95,259	53.2%
Prior use of sulfonylurea	25,853	14.4%
Prior use of thiazolidinedione	8,641	4.8%
Prior use of long/intermediate acting insulin	35,627	19.9%
Prior use of short/rapid acting insulin	22,188	12.4%
Prior use of combination insulin	2,181	1.2%
Prior use of alpha-glucosidase inhibitor	384	0.2%
Prior use of meglitinides	777	0.4%
Prior use of DPP-4 inhibitors	11,111	6.2%
Prior use of SGLT-2 inhibitors	44,104	24.6%
Prior use of bromocriptine or colesevelam	590	0.3%

Table 1ai. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators for the 45–64 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators (ages 45-64 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	19.2	19.3
Mean number of emergency room encounters	0.5	1.5
Mean number of inpatient hospital encounters	0.1	0.5
Mean number of non-acute institutional encounters	0.0	0.1
Mean number of other ambulatory encounters	4.9	9.0
Mean number of filled prescriptions	47.1	36.6
Mean number of generics dispensed	12.7	7.1
Mean number of unique drug classes dispensed	11.2	6.0

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

[5]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. J Gerontol A Biol Sci Med Sci. 2018;73(7)980-987.

[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

Table 1aj. Aggregated Characteristics of GLP-1 Agonist Initiators for the 45–64 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators (ages 45-64 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	1,433,415	N/A[2]
Demographic Characteristics		
Age (years)	55.6	5.4
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	0	0.0%
25-34 years	0	0.0%
35-44 years	0	0.0%
45-54 years	651,776	45.5%
55-64 years	781,639	54.5%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	829,567	57.9%
Male	603,848	42.1%
Race[3]		
American Indian or Alaska Native	12,030	0.8%
Asian	26,241	1.8%
Black or African American	176,296	12.3%
Multi-racial	14,792	1.0%
Native Hawaiian or Other Pacific Islander	2,916	0.2%
Unknown	551,788	38.5%
White	649,352	45.3%
Hispanic origin[3]		
Yes	96,888	6.8%
No	780,917	54.5%
Unknown	555,610	38.8%
Year		
2008	3,781	0.3%
2009	6,772	0.5%
2010	28,492	2.0%
2011	26,985	1.9%
2012	28,269	2.0%
2013	29,802	2.1%
2014	31,338	2.2%
2015	45,558	3.2%
2016	62,921	4.4%
2017	91,950	6.4%
2018	115,906	8.1%
2019	136,996	9.6%
2020	141,185	9.8%
2021	220,022	15.3%
2022	174,122	12.1%

Table 1aj. Aggregated Characteristics of GLP-1 Agonist Initiators for the 45–64 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators (ages 45-64 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2023	259,999	18.1%
2024	29,317	2.0%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	1.4	1.8
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	683,607	47.7%
1	264,350	18.4%
2	193,061	13.5%
≥3	292,397	20.4%
Claims-Based frailty index[5]	0.2	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	1,349,153	94.1%
≥0.25 (frail)	84,262	5.9%
Combined comorbidity score[6]	1.6	2.2
Combined comorbidity score categories		
<1	559,582	39.0%
1	316,438	22.1%
2	198,141	13.8%
≥3	359,254	25.1%
T1DM (>50% code days)[7]	12,118	0.8%
Any T1DM code	92,632	6.5%
Any T2DM code	1,183,023	82.5%
T2DM (and no T1DM codes)	1,093,295	76.3%
Obesity	756,925	52.8%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	6,849	0.5%
Obesity only (no T1DM)	751,656	52.4%
T1DM and Obesity	5,269	0.4%
Neither T1DM nor Obesity	669,641	46.7%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	545,732	38.1%
Obesity only (no T2DM)	209,362	14.6%
T2DM and Obesity	547,563	38.2%
Neither T2DM nor obesity	130,758	9.1%
Weight loss procedures	2,401	0.2%
Body mass index (BMI) (kg/m^2)		
BMI <20	2,839	0.2%
BMI 20-24	10,769	0.8%
BMI 25-29	63,277	4.4%
BMI 30-39	292,507	20.4%
BMI 40-69	242,316	16.9%
BMI 70+	5,638	0.4%
Hypertension	1,081,428	75.4%
Hyperlipidemia	1,011,550	70.6%

Table 1aj. Aggregated Characteristics of GLP-1 Agonist Initiators for the 45–64 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators (ages 45-64 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Ischemic heart disease	237,351	16.6%
Cerebrovascular disease	56,363	3.9%
Peripheral vascular disease	136,985	9.6%
Heart failure	128,907	9.0%
Obstructive sleep apnea	314,292	21.9%
Chronic kidney disease	652,578	45.5%
Dialysis	19,412	1.4%
Smoking	298,515	20.8%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	932,666	65.1%
Prior use of sulfonylurea	393,677	27.5%
Prior use of thiazolidinedione	103,519	7.2%
Prior use of long/intermediate acting insulin	408,312	28.5%
Prior use of short/rapid acting insulin	243,528	17.0%
Prior use of combination insulin	45,198	3.2%
Prior use of alpha-glucosidase inhibitor	5,579	0.4%
Prior use of meglitinides	11,313	0.8%
Prior use of DPP-4 inhibitors	279,099	19.5%
Prior use of SGLT-2 inhibitors	237,277	16.6%
Prior use of bromocriptine or colesevelam	8,124	0.6%

Table 1aj. Aggregated Characteristics of GLP-1 Agonist Initiators for the 45–64 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators (ages 45-64 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	20.3	22.4
Mean number of emergency room encounters	0.7	1.9
Mean number of inpatient hospital encounters	0.2	0.7
Mean number of non-acute institutional encounters	0.0	0.3
Mean number of other ambulatory encounters	9.2	28.2
Mean number of filled prescriptions	54.9	42.8
Mean number of generics dispensed	13.0	7.1
Mean number of unique drug classes dispensed	11.3	6.1

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

[5]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. J Gerontol A Biol Sci Med Sci. 2018;73(7)980-987.

[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

Table 1ak. Aggregated Characteristics of SGLT-2 Inhibitor Initiators for the 45–64 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators (ages 45-64 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	1,053,786	N/A[2]
Demographic Characteristics		
Age (years)	56.2	5.4
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	0	0.0%
25-34 years	0	0.0%
35-44 years	0	0.0%
45-54 years	422,529	40.1%
55-64 years	631,257	59.9%
65-74 years	0	0.0%
≥ 75 years	0	0.0%
Age		
Sex		
Female	484,198	45.9%
Male	569,588	54.1%
Race[3]		
American Indian or Alaska Native	8,434	0.8%
Asian	39,707	3.8%
Black or African American	132,567	12.6%
Multi-racial	8,397	0.8%
Native Hawaiian or Other Pacific Islander	3,082	0.3%
Unknown	420,580	39.9%
White	441,019	41.9%
Hispanic origin[3]		
Yes	95,507	9.1%
No	574,635	54.5%
Unknown	383,644	36.4%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	10,823	1.0%
2014	47,363	4.5%
2015	69,661	6.6%
2016	67,454	6.4%
2017	91,742	8.7%
2018	91,823	8.7%
2019	115,123	10.9%
2020	132,542	12.6%
2021	192,164	18.2%
2022	105,264	10.0%

Table 1ak. Aggregated Characteristics of SGLT-2 Inhibitor Initiators for the 45–64 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators (ages 45-64 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2023	113,657	10.8%
2024	16,170	1.5%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	1.5	1.8
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	441,273	41.9%
1	201,618	19.1%
2	167,504	15.9%
≥3	243,391	23.1%
Claims-Based frailty index[5]	0.2	0.0
Claims-Based frailty index categories		
<0.25 (not frail)	991,026	94.0%
≥0.25 (frail)	62,760	6.0%
Combined comorbidity score[6]	1.8	2.4
Combined comorbidity score categories		
<1	383,094	36.4%
1	225,446	21.4%
2	145,726	13.8%
≥3	299,520	28.4%
T1DM (>50% code days)[7]	7,519	0.7%
Any T1DM code	61,674	5.9%
Any T2DM code	971,972	92.2%
T2DM (and no T1DM codes)	911,957	86.5%
Obesity	438,677	41.6%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	5,034	0.5%
Obesity only (no T1DM)	436,192	41.4%
T1DM and Obesity	2,485	0.2%
Neither T1DM nor Obesity	610,075	57.9%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	529,722	50.3%
Obesity only (no T2DM)	56,442	5.4%
T2DM and Obesity	382,235	36.3%
Neither T2DM nor obesity	85,387	8.1%
Weight loss procedures	1,649	0.2%
Body mass index (BMI) (kg/m^2)		
BMI <20	3,484	0.3%
BMI 20-24	15,001	1.4%
BMI 25-29	58,962	5.6%
BMI 30-39	182,358	17.3%
BMI 40-69	124,680	11.8%
BMI 70+	2,577	0.2%
Hypertension	827,117	78.5%
Hyperlipidemia	770,978	73.2%

Table 1ak. Aggregated Characteristics of SGLT-2 Inhibitor Initiators for the 45–64 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators (ages 45-64 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Ischemic heart disease	222,938	21.2%
Cerebrovascular disease	47,827	4.5%
Peripheral vascular disease	110,640	10.5%
Heart failure	145,649	13.8%
Obstructive sleep apnea	194,942	18.5%
Chronic kidney disease	554,145	52.6%
Dialysis	10,397	1.0%
Smoking	237,515	22.5%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	778,751	73.9%
Prior use of sulfonylurea	344,728	32.7%
Prior use of thiazolidinedione	75,978	7.2%
Prior use of long/intermediate acting insulin	298,033	28.3%
Prior use of short/rapid acting insulin	168,566	16.0%
Prior use of combination insulin	31,621	3.0%
Prior use of alpha-glucosidase inhibitor	4,892	0.5%
Prior use of meglitinides	8,741	0.8%
Prior use of DPP-4 inhibitors	248,705	23.6%
Prior use of SGLT-2 inhibitors[8]	199	0.0%
Prior use of bromocriptine or colesevelam	6,505	0.6%

Table 1ak. Aggregated Characteristics of SGLT-2 Inhibitor Initiators for the 45–64 Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators (ages 45-64 years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	18.4	19.2
Mean number of emergency room encounters	0.8	2.1
Mean number of inpatient hospital encounters	0.3	0.8
Mean number of non-acute institutional encounters	0.0	0.3
Mean number of other ambulatory encounters	9.7	30.3
Mean number of filled prescriptions	55.3	43.2
Mean number of generics dispensed	12.7	7.1
Mean number of unique drug classes dispensed	11.1	6.1

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

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[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

[8]Identified in the procedure table only.

Table 1al. Aggregated Characteristics of DPP-4 Inhibitor Initiators for the 65+ Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitor initiators (ages 65+ years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	1,635,046	N/A[2]
Demographic Characteristics		
Age (years)	75.2	7.0
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	0	0.0%
25-34 years	0	0.0%
35-44 years	0	0.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	909,546	55.6%
≥ 75 years	725,500	44.4%
Age		
Sex		
Female	898,463	55.0%
Male	736,583	45.0%
Race[3]		
American Indian or Alaska Native	8,886	0.5%
Asian	75,424	4.6%
Black or African American	188,664	11.5%
Multi-racial	1,038	0.1%
Native Hawaiian or Other Pacific Islander	3,924	0.2%
Unknown	214,391	13.1%
White	1,142,719	69.9%
Hispanic origin[3]		
Yes	72,731	4.4%
No	1,373,582	84.0%
Unknown	188,733	11.5%
Year		
2008	8,247	0.5%
2009	12,383	0.8%
2010	13,707	0.8%
2011	150,333	9.2%
2012	153,080	9.4%
2013	132,419	8.1%
2014	141,160	8.6%
2015	147,264	9.0%
2016	142,521	8.7%
2017	137,058	8.4%
2018	125,179	7.7%
2019	118,705	7.3%
2020	100,127	6.1%
2021	97,923	6.0%
2022	75,152	4.6%
2023	72,840	4.5%

Table 1al. Aggregated Characteristics of DPP-4 Inhibitor Initiators for the 65+ Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitor initiators (ages 65+ years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2024	6,948	0.4%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	2.7	2.3
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	349,645	21.4%
1	244,281	14.9%
2	289,685	17.7%
≥3	751,435	46.0%
Claims-Based frailty index[5]	0.2	0.1
Claims-Based frailty index categories		
<0.25 (not frail)	1,378,354	84.3%
≥0.25 (frail)	256,692	15.7%
Combined comorbidity score[6]	3.1	3.4
Combined comorbidity score categories		
<1	429,476	26.3%
1	232,748	14.2%
2	199,756	12.2%
≥3	773,066	47.3%
T1DM (>50% code days)[7]	8,600	0.5%
Any T1DM code	155,121	9.5%
Any T2DM code	1,588,876	97.2%
T2DM (and no T1DM codes)	1,435,012	87.8%
Obesity	435,381	26.6%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	7,031	0.4%
Obesity only (no T1DM)	433,812	26.5%
T1DM and Obesity	1,569	0.1%
Neither T1DM nor Obesity	1,192,634	72.9%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	1,053,155	64.4%
Obesity only (no T2DM)	53,524	3.3%
T2DM and Obesity	381,857	23.4%
Neither T2DM nor obesity	146,510	9.0%
Weight loss procedures	5,704	0.3%
Body mass index (BMI) (kg/m^2)		
BMI <20	10,117	0.6%
BMI 20-24	41,830	2.6%
BMI 25-29	115,550	7.1%
BMI 30-39	202,410	12.4%
BMI 40-69	74,244	4.5%
BMI 70+	1,399	0.1%
Hypertension	1,508,378	92.3%
Hyperlipidemia	1,411,221	86.3%
Ischemic heart disease	627,746	38.4%

Table 1al. Aggregated Characteristics of DPP-4 Inhibitor Initiators for the 65+ Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitor initiators (ages 65+ years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Cerebrovascular disease	175,309	10.7%
Peripheral vascular disease	405,808	24.8%
Heart failure	351,000	21.5%
Obstructive sleep apnea	185,572	11.3%
Chronic kidney disease	820,625	50.2%
Dialysis	35,438	2.2%
Smoking	320,564	19.6%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	1,054,945	64.5%
Prior use of sulfonylurea	726,894	44.5%
Prior use of thiazolidinedione	185,206	11.3%
Prior use of long/intermediate acting insulin	273,542	16.7%
Prior use of short/rapid acting insulin	141,515	8.7%
Prior use of combination insulin	45,761	2.8%
Prior use of alpha-glucosidase inhibitor	10,200	0.6%
Prior use of meglitinides	34,835	2.1%
Prior use of DPP-4 inhibitors[8]	252	0.0%
Prior use of SGLT-2 inhibitors	88,488	5.4%
Prior use of bromocriptine or colesevelam	13,928	0.9%

Table 1al. Aggregated Characteristics of DPP-4 Inhibitor Initiators for the 65+ Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitor initiators (ages 65+ years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	23.1	23.2
Mean number of emergency room encounters	0.6	1.5
Mean number of inpatient hospital encounters	0.5	1.0
Mean number of non-acute institutional encounters	0.2	0.6
Mean number of other ambulatory encounters	10.4	22.0
Mean number of filled prescriptions	51.3	40.2
Mean number of generics dispensed	12.4	6.4
Mean number of unique drug classes dispensed	11.0	5.6

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

[5]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. J Gerontol A Biol Sci Med Sci. 2018;73(7)980-987.

[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

[8]Identified in the procedure table only.

Table 1am. Aggregated Characteristics of DPP-4 Inhibitor/SGLT-2 Inhibitor Combination Product Initiators for the 65+ Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators (ages 65+ years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	22,623	N/A[2]
Demographic Characteristics		
Age (years)	73.5	5.8
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	0	0.0%
25-34 years	0	0.0%
35-44 years	0	0.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	14,851	65.6%
≥ 75 years	7,772	34.4%
Age		
Sex		
Female	10,703	47.3%
Male	11,920	52.7%
Race[3]		
American Indian or Alaska Native	57	0.3%
Asian	971	4.3%
Black or African American	2,569	11.4%
Multi-racial	27	0.1%
Native Hawaiian or Other Pacific Islander	129	0.6%
Unknown	2,644	11.7%
White	16,226	71.7%
Hispanic origin[3]		
Yes	810	3.6%
No	18,970	83.9%
Unknown	2,843	12.6%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	0	0.0%
2014	0	0.0%
2015	954	4.2%
2016	1,956	8.6%
2017	1,526	6.7%
2018	1,958	8.7%
2019	2,250	9.9%
2020	2,600	11.5%
2021	3,879	17.1%
2022	3,642	16.1%
2023	3,519	15.6%

Table 1am. Aggregated Characteristics of DPP-4 Inhibitor/SGLT-2 Inhibitor Combination Product Initiators for the 65+ Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators (ages 65+ years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2024	339	1.5%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	2.4	2.1
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	5,079	22.5%
1	3,982	17.6%
2	4,279	18.9%
≥3	9,283	41.0%
Claims-Based frailty index[5]	0.2	0.1
Claims-Based frailty index categories		
<0.25 (not frail)	21,046	93.0%
≥0.25 (frail)	1,577	7.0%
Combined comorbidity score[6]	2.7	2.9
Combined comorbidity score categories		
<1	5,444	24.1%
1	3,903	17.3%
2	3,347	14.8%
≥3	9,929	43.9%
T1DM (>50% code days)[7]	65	0.3%
Any T1DM code	1,294	5.7%
Any T2DM code	22,332	98.7%
T2DM (and no T1DM codes)	21,049	93.0%
Obesity	8,208	36.3%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	48	0.2%
Obesity only (no T1DM)	8,191	36.2%
T1DM and Obesity	17	0.1%
Neither T1DM nor Obesity	14,367	63.5%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	13,440	59.4%
Obesity only (no T2DM)	599	2.6%
T2DM and Obesity	7,609	33.6%
Neither T2DM nor obesity	975	4.3%
Weight loss procedures	22	0.1%
Body mass index (BMI) (kg/m^2)		
BMI <20	141	0.6%
BMI 20-24	1,179	5.2%
BMI 25-29	3,150	13.9%
BMI 30-39	5,004	22.1%
BMI 40-69	1,351	6.0%
BMI 70+	22	0.1%
Hypertension	20,909	92.4%
Hyperlipidemia	20,590	91.0%
Ischemic heart disease	8,142	36.0%

Table 1am. Aggregated Characteristics of DPP-4 Inhibitor/SGLT-2 Inhibitor Combination Product Initiators for the 65+ Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators (ages 65+ years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Cerebrovascular disease	1,700	7.5%
Peripheral vascular disease	5,498	24.3%
Heart failure	3,593	15.9%
Obstructive sleep apnea	3,351	14.8%
Chronic kidney disease	15,220	67.3%
Dialysis	164	0.7%
Smoking	4,613	20.4%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	15,880	70.2%
Prior use of sulfonylurea	9,671	42.7%
Prior use of thiazolidinedione	2,754	12.2%
Prior use of long/intermediate acting insulin	4,978	22.0%
Prior use of short/rapid acting insulin	1,900	8.4%
Prior use of combination insulin	586	2.6%
Prior use of alpha-glucosidase inhibitor	205	0.9%
Prior use of meglitinides	512	2.3%
Prior use of DPP-4 inhibitors	8,793	38.9%
Prior use of SGLT-2 inhibitors	7,652	33.8%
Prior use of bromocriptine or colesevelam	194	0.9%

Table 1am. Aggregated Characteristics of DPP-4 Inhibitor/SGLT-2 Inhibitor Combination Product Initiators for the 65+ Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4/SGLT-2 inhibitor initiators (ages 65+ years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	21.5	17.2
Mean number of emergency room encounters	0.5	1.2
Mean number of inpatient hospital encounters	0.2	0.6
Mean number of non-acute institutional encounters	0.0	0.3
Mean number of other ambulatory encounters	5.6	12.4
Mean number of filled prescriptions	45.5	33.1
Mean number of generics dispensed	12.6	6.2
Mean number of unique drug classes dispensed	10.8	5.3

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

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[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

Table 1an. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators for the 65+ Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators (ages 65+ years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	132,386	N/A[2]
Demographic Characteristics		
Age (years)	72.1	4.7
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	0	0.0%
25-34 years	0	0.0%
35-44 years	0	0.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	98,305	74.3%
≥ 75 years	34,081	25.7%
Age		
Sex		
Female	77,672	58.7%
Male	54,714	41.3%
Race[3]		
American Indian or Alaska Native	315	0.2%
Asian	1,495	1.1%
Black or African American	11,504	8.7%
Multi-racial	273	0.2%
Native Hawaiian or Other Pacific Islander	342	0.3%
Unknown	12,043	9.1%
White	106,414	80.4%
Hispanic origin[3]		
Yes	2,302	1.7%
No	111,668	84.4%
Unknown	18,416	13.9%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	0	0.0%
2014	0	0.0%
2015	0	0.0%
2016	0	0.0%
2017	0	0.0%
2018	0	0.0%
2019	0	0.0%
2020	0	0.0%
2021	0	0.0%
2022	18,384	13.9%

Table 1an. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators for the 65+ Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators (ages 65+ years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2023	97,773	73.9%
2024	16,229	12.3%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	2.3	2.1
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	31,428	23.7%
1	23,994	18.1%
2	24,945	18.8%
≥3	52,019	39.3%
Claims-Based frailty index[5]	0.2	0.1
Claims-Based frailty index categories		
<0.25 (not frail)	121,383	91.7%
≥0.25 (frail)	11,003	8.3%
Combined comorbidity score[6]	2.9	2.8
Combined comorbidity score categories		
<1	28,140	21.3%
1	22,252	16.8%
2	19,916	15.0%
≥3	62,078	46.9%
T1DM (>50% code days)[7]	594	0.4%
Any T1DM code	5,487	4.1%
Any T2DM code	116,637	88.1%
T2DM (and no T1DM codes)	111,273	84.1%
Obesity	87,347	66.0%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	265	0.2%
Obesity only (no T1DM)	87,018	65.7%
T1DM and Obesity	329	0.2%
Neither T1DM nor Obesity	44,774	33.8%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	37,797	28.6%
Obesity only (no T2DM)	13,871	10.5%
T2DM and Obesity	73,476	55.5%
Neither T2DM nor obesity	7,242	5.5%
Weight loss procedures	136	0.1%
Body mass index (BMI) (kg/m^2)		
BMI <20	278	0.2%
BMI 20-24	1,774	1.3%
BMI 25-29	10,945	8.3%
BMI 30-39	46,981	35.5%
BMI 40-69	26,930	20.3%
BMI 70+	345	0.3%
Hypertension	120,054	90.7%
Hyperlipidemia	118,715	89.7%

Table 1an. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators for the 65+ Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators (ages 65+ years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Ischemic heart disease	45,866	34.6%
Cerebrovascular disease	7,959	6.0%
Peripheral vascular disease	30,296	22.9%
Heart failure	23,166	17.5%
Obstructive sleep apnea	42,625	32.2%
Chronic kidney disease	80,101	60.5%
Dialysis	1,533	1.2%
Smoking	31,763	24.0%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	73,010	55.1%
Prior use of sulfonylurea	29,709	22.4%
Prior use of thiazolidinedione	9,820	7.4%
Prior use of long/intermediate acting insulin	38,099	28.8%
Prior use of short/rapid acting insulin	21,147	16.0%
Prior use of combination insulin	2,846	2.1%
Prior use of alpha-glucosidase inhibitor	462	0.3%
Prior use of meglitinides	1,625	1.2%
Prior use of DPP-4 inhibitors	12,584	9.5%
Prior use of SGLT-2 inhibitors	38,176	28.8%
Prior use of bromocriptine or colesevelam	662	0.5%

Table 1an. Aggregated Characteristics of GIP/GLP-1 Agonist Initiators for the 65+ Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonist initiators (ages 65+ years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	26.4	21.1
Mean number of emergency room encounters	0.5	1.3
Mean number of inpatient hospital encounters	0.2	0.5
Mean number of non-acute institutional encounters	0.0	0.2
Mean number of other ambulatory encounters	6.5	10.6
Mean number of filled prescriptions	50.5	34.9
Mean number of generics dispensed	14.7	6.7
Mean number of unique drug classes dispensed	12.8	5.8

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

[5]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. J Gerontol A Biol Sci Med Sci. 2018;73(7)980-987.

[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

Table 1ao. Aggregated Characteristics of GLP-1 Agonist Initiators for the 65+ Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators (ages 65+ years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	1,346,743	N/A[2]
Demographic Characteristics		
Age (years)	72.5	5.4
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	0	0.0%
25-34 years	0	0.0%
35-44 years	0	0.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	973,014	72.2%
≥ 75 years	373,729	27.8%
Age		
Sex		
Female	745,187	55.3%
Male	601,556	44.7%
Race[3]		
American Indian or Alaska Native	8,003	0.6%
Asian	31,050	2.3%
Black or African American	126,190	9.4%
Multi-racial	1,561	0.1%
Native Hawaiian or Other Pacific Islander	3,099	0.2%
Unknown	133,563	9.9%
White	1,043,277	77.5%
Hispanic origin[3]		
Yes	38,691	2.9%
No	1,146,053	85.1%
Unknown	161,999	12.0%
Year		
2008	1,130	0.1%
2009	1,252	0.1%
2010	5,401	0.4%
2011	19,587	1.5%
2012	23,762	1.8%
2013	29,186	2.2%
2014	32,341	2.4%
2015	42,636	3.2%
2016	53,964	4.0%
2017	69,126	5.1%
2018	91,397	6.8%
2019	113,527	8.4%
2020	114,854	8.5%
2021	173,314	12.9%
2022	215,724	16.0%
2023	335,676	24.9%

Table 1ao. Aggregated Characteristics of GLP-1 Agonist Initiators for the 65+ Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators (ages 65+ years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2024	23,866	1.8%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	2.5	2.2
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	306,850	22.8%
1	223,466	16.6%
2	244,781	18.2%
≥3	571,646	42.4%
Claims-Based frailty index[5]	0.2	0.1
Claims-Based frailty index categories		
<0.25 (not frail)	1,221,410	90.7%
≥0.25 (frail)	125,333	9.3%
Combined comorbidity score[6]	2.9	3.0
Combined comorbidity score categories		
<1	317,644	23.6%
1	219,139	16.3%
2	192,091	14.3%
≥3	617,869	45.9%
T1DM (>50% code days)[7]	7,338	0.5%
Any T1DM code	99,287	7.4%
Any T2DM code	1,235,681	91.8%
T2DM (and no T1DM codes)	1,137,478	84.5%
Obesity	687,700	51.1%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	4,308	0.3%
Obesity only (no T1DM)	684,670	50.8%
T1DM and Obesity	3,030	0.2%
Neither T1DM nor Obesity	654,735	48.6%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	570,732	42.4%
Obesity only (no T2DM)	120,954	9.0%
T2DM and Obesity	566,746	42.1%
Neither T2DM nor obesity	88,311	6.6%
Weight loss procedures	1,611	0.1%
Body mass index (BMI) (kg/m^2)		
BMI <20	4,190	0.3%
BMI 20-24	25,502	1.9%
BMI 25-29	109,046	8.1%
BMI 30-39	350,382	26.0%
BMI 40-69	177,732	13.2%
BMI 70+	2,336	0.2%
Hypertension	1,231,605	91.5%
Hyperlipidemia	1,187,630	88.2%
Ischemic heart disease	475,741	35.3%

Table 1ao. Aggregated Characteristics of GLP-1 Agonist Initiators for the 65+ Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators (ages 65+ years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Cerebrovascular disease	98,621	7.3%
Peripheral vascular disease	302,828	22.5%
Heart failure	245,358	18.2%
Obstructive sleep apnea	313,650	23.3%
Chronic kidney disease	807,339	59.9%
Dialysis	19,143	1.4%
Smoking	311,816	23.2%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	854,267	63.4%
Prior use of sulfonylurea	489,223	36.3%
Prior use of thiazolidinedione	125,431	9.3%
Prior use of long/intermediate acting insulin	411,625	30.6%
Prior use of short/rapid acting insulin	216,189	16.1%
Prior use of combination insulin	48,089	3.6%
Prior use of alpha-glucosidase inhibitor	8,411	0.6%
Prior use of meglitinides	25,357	1.9%
Prior use of DPP-4 inhibitors	314,498	23.4%
Prior use of SGLT-2 inhibitors	241,819	18.0%
Prior use of bromocriptine or colesevelam	9,217	0.7%

Table 1ao. Aggregated Characteristics of GLP-1 Agonist Initiators for the 65+ Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GLP-1 agonist initiators (ages 65+ years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	24.6	21.5
Mean number of emergency room encounters	0.5	1.3
Mean number of inpatient hospital encounters	0.3	0.7
Mean number of non-acute institutional encounters	0.1	0.4
Mean number of other ambulatory encounters	7.6	16.8
Mean number of filled prescriptions	49.5	38.5
Mean number of generics dispensed	13.1	6.3
Mean number of unique drug classes dispensed	11.5	5.5

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

[4]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.

[5]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. J Gerontol A Biol Sci Med Sci. 2018;73(7)980-987.

[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

Table 1ap. Aggregated Characteristics of SGLT-2 Inhibitor Initiators for the 65+ Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators (ages 65+ years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Unique patients	1,539,208	N/A[2]
Demographic Characteristics		
Age (years)	74.4	6.4
0-11 years	0	0.0%
12-17 years	0	0.0%
18-24 years	0	0.0%
25-34 years	0	0.0%
35-44 years	0	0.0%
45-54 years	0	0.0%
55-64 years	0	0.0%
65-74 years	924,497	60.1%
≥ 75 years	614,711	39.9%
Age		
Sex		
Female	710,529	46.2%
Male	828,679	53.8%
Race[3]		
American Indian or Alaska Native	7,659	0.5%
Asian	61,340	4.0%
Black or African American	154,854	10.1%
Multi-racial	1,518	0.1%
Native Hawaiian or Other Pacific Islander	4,778	0.3%
Unknown	161,953	10.5%
White	1,147,106	74.5%
Hispanic origin[3]		
Yes	50,929	3.3%
No	1,297,284	84.3%
Unknown	190,995	12.4%
Year		
2008	0	0.0%
2009	0	0.0%
2010	0	0.0%
2011	0	0.0%
2012	0	0.0%
2013	6,906	0.4%
2014	39,750	2.6%
2015	65,341	4.2%
2016	62,203	4.0%
2017	72,523	4.7%
2018	71,824	4.7%
2019	109,052	7.1%
2020	129,916	8.4%
2021	217,835	14.2%
2022	309,326	20.1%

Table 1ap. Aggregated Characteristics of SGLT-2 Inhibitor Initiators for the 65+ Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators (ages 65+ years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
2023	416,905	27.1%
2024	37,627	2.4%
Health Characteristics (365 days prior to the index date, in any care setting)		
Adapted Diabetes Complications Severity Index (aDCSI)[4]	2.8	2.2
Adapted Diabetes Complications Severity Index (aDCSI) categories		
0	269,296	17.5%
1	211,703	13.8%
2	310,259	20.2%
≥3	747,950	48.6%
Claims-Based frailty index[5]	0.2	0.1
Claims-Based frailty index categories		
<0.25 (not frail)	1,375,621	89.4%
≥0.25 (frail)	163,587	10.6%
Combined comorbidity score[6]	3.7	3.4
Combined comorbidity score categories		
<1	288,493	18.7%
1	199,599	13.0%
2	194,914	12.7%
≥3	856,202	55.6%
T1DM (>50% code days)[7]	6,210	0.4%
Any T1DM code	81,081	5.3%
Any T2DM code	1,343,269	87.3%
T2DM (and no T1DM codes)	1,263,219	82.1%
Obesity	611,937	39.8%
Type 1 Diabetes Mellitus by Obesity Cross-Classification		
T1DM only (no obesity)	4,203	0.3%
Obesity only (no T1DM)	609,930	39.6%
T1DM and Obesity	2,007	0.1%
Neither T1DM nor Obesity	923,068	60.0%
Type 2 Diabetes Mellitus by Obesity Cross-Classification		
T2DM only	749,950	48.7%
Obesity only (no T2DM)	98,668	6.4%
T2DM and Obesity	513,269	33.3%
Neither T2DM nor obesity	177,321	11.5%
Weight loss procedures	2,272	0.1%
Body mass index (BMI) (kg/m^2)		
BMI <20	14,400	0.9%
BMI 20-24	65,181	4.2%
BMI 25-29	175,223	11.4%
BMI 30-39	350,910	22.8%
BMI 40-69	127,764	8.3%
BMI 70+	1,994	0.1%
Hypertension	1,430,998	93.0%
Hyperlipidemia	1,367,281	88.8%

Table 1ap. Aggregated Characteristics of SGLT-2 Inhibitor Initiators for the 65+ Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators (ages 65+ years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Ischemic heart disease	693,206	45.0%
Cerebrovascular disease	134,796	8.8%
Peripheral vascular disease	399,816	26.0%
Heart failure	490,740	31.9%
Obstructive sleep apnea	304,716	19.8%
Chronic kidney disease	971,349	63.1%
Dialysis	23,518	1.5%
Smoking	419,231	27.2%
Other Diabetes Medication Use (in 365 days prior to the index date)		
Prior use of metformin	928,151	60.3%
Prior use of sulfonylurea	509,152	33.1%
Prior use of thiazolidinedione	118,945	7.7%
Prior use of long/intermediate acting insulin	337,434	21.9%
Prior use of short/rapid acting insulin	167,822	10.9%
Prior use of combination insulin	37,927	2.5%
Prior use of alpha-glucosidase inhibitor	8,264	0.5%
Prior use of meglitinides	24,675	1.6%
Prior use of DPP-4 inhibitors	323,885	21.0%
Prior use of SGLT-2 inhibitors[8]	202	0.0%
Prior use of bromocriptine or colesevelam	9,676	0.6%

Table 1ap. Aggregated Characteristics of SGLT-2 Inhibitor Initiators for the 65+ Age Group in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitor initiators (ages 65+ years)	
Patient Characteristics	**Number/Mean**	**Percent/ Standard Deviation[1]**
Health Service Utilization Intensity Metrics		
Mean number of ambulatory encounters	23.9	19.1
Mean number of emergency room encounters	0.6	1.6
Mean number of inpatient hospital encounters	0.4	0.9
Mean number of non-acute institutional encounters	0.1	0.4
Mean number of other ambulatory encounters	8.3	16.9
Mean number of filled prescriptions	46.5	35.0
Mean number of generics dispensed	12.6	6.2
Mean number of unique drug classes dispensed	11.2	5.4

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

[1]Value represents standard deviation where no % follows the value.

[2]N/A= Not Applicable

[3]Race and ethnicity data may not be completely populated at all Data Partners; therefore, data about race/ethnicity may be incomplete.

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[5]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. J Gerontol A Biol Sci Med Sci. 2018;73(7)980-987.

[6]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.

[7]Klompas M, Eggleston E, McVetta J, Lazarus R, Li L, Platt R. Automated detection and classification of type 1 versus type 2 diabetes using electronic health record data. Diabetes Care 2013;36:914–921. Hampp C, Swain RS, Horgan C, et al. Use of Sodium-Glucose Cotransporter 2 Inhibitors in Patients With Type 1 Diabetes and Rates of Diabetic Ketoacidosis. Diabetes Care. 2020;43(1):90-97. *Note assessment of a majority of T1DM codes based on number of days within [-365, -5] on which any T1DM and/or T2DM codes were observed* .

[8]Identified in the procedure table only.

Table 2a. Categorical Summary of Patients' Cumulative Treatment Episode Durations for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

		Number of Patients by Cumulative Treatment Duration							
		1-30 Days		31-60 Days		61-90 Days		91-180 Days	
Exposure group	Total Number of Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
DPP-4 inhibitors	2,921,067	317,128	10.9%	172,785	5.9%	234,598	8.0%	372,201	12.7%
DPP-4/SGLT-2 inhibitors	47,692	5,376	11.3%	3,134	6.6%	4,693	9.8%	7,009	14.7%
GIP/GLP-1 agonists	374,607	72,477	19.3%	55,726	14.9%	41,249	11.0%	78,878	21.1%
GLP-1 agonists	3,321,029	382,779	11.5%	287,825	8.7%	276,678	8.3%	542,899	16.3%
SGLT-2 inhibitors	2,842,393	325,747	11.5%	200,078	7.0%	284,321	10.0%	432,599	15.2%
Canagliflozin	501,332	69,440	13.9%	36,535	7.3%	47,974	9.6%	72,100	14.4%
Saxenda	84,064	18,078	21.5%	12,847	15.3%	11,014	13.1%	18,115	21.5%
Ozempic	1,364,127	152,930	11.2%	149,258	10.9%	131,244	9.6%	265,616	19.5%
Wegovy	163,331	35,629	21.8%	21,640	13.2%	15,455	9.5%	31,966	19.6%
Rybelsus	277,037	61,255	22.1%	30,688	11.1%	33,118	12.0%	49,744	18.0%
Mounjaro	349,937	61,245	17.5%	46,803	13.4%	37,513	10.7%	78,259	22.4%
Zepbound	27,069	12,744	47.1%	9,738	36.0%	4,043	14.9%	*****	*****

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

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

Table 2a. Categorical Summary of Patients' Cumulative Treatment Episode Durations for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

Exposure group	Total Number of Patients	181-365 Days		366-730 Days		>730 Days	
		Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
DPP-4 inhibitors	2,921,067	478,175	16.4%	519,368	17.8%	826,812	28.3%
DPP-4/SGLT-2 inhibitors	47,692	9,157	19.2%	9,441	19.8%	8,882	18.6%
GIP/GLP-1 agonists	374,607	95,430	25.5%	30,847	8.2%	0	0.0%
GLP-1 agonists	3,321,029	679,246	20.5%	573,841	17.3%	577,761	17.4%
SGLT-2 inhibitors	2,842,393	544,662	19.2%	525,190	18.5%	529,796	18.6%
Canagliflozin	501,332	87,390	17.4%	87,120	17.4%	100,773	20.1%
Saxenda	84,064	13,966	16.6%	7,348	8.7%	2,696	3.2%
Ozempic	1,364,127	325,265	23.8%	217,401	15.9%	122,413	9.0%
Wegovy	163,331	43,803	26.8%	13,206	8.1%	1,632	1.0%
Rybelsus	277,037	48,321	17.4%	37,413	13.5%	16,498	6.0%
Mounjaro	349,937	95,352	27.2%	30,765	8.8%	0	0.0%
Zepbound	27,069	*****	*****	0	0.0%	0	0.0%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

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

Table 2b. Continuous Summary of Patients' Cumulative Treatment Episode Durations for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

		Distribution of Cumulative Treatment Duration, days						
Exposure group	Total Number of Patients	Minimum	Q1	Median	Q3	Maximum	Mean	Standard Deviation
DPP-4 inhibitors	2,921,067	1	94	328	838	5,884	611.7	739.5
DPP-4/SGLT-2 inhibitors	47,692	1	90	266	592	3,175	428.5	478.8
GIP/GLP-1 agonists	374,607	1	46	112	228	718	150.8	127.8
GLP-1 agonists	3,321,029	1	84	223	532	5,363	413.9	517.1
SGLT-2 inhibitors	2,842,393	1	90	240	570	3,965	433.9	521.1
Canagliflozin	501,332	1	90	240	600	3,881	446.2	538.9
Saxenda	84,064	1	48	92	210	3,071	177.5	219.4
Ozempic	1,364,127	1	80	174	364	2,299	283.4	309.5
Wegovy	163,331	1	52	112	250	1,030	164.3	152.0
Rybelsus	277,037	1	55	120	300	1,641	220.9	248.2
Mounjaro	349,937	1	55	119	241	718	158.5	128.3
Zepbound	27,069	1	22	32	56	185	38.6	24.7

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; Q = quartile; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 2c. Categorical Summary of Patients' Cumulative Treatment Episode Durations for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Sex

		Number of Patients by Cumulative Treatment Duration							
		1-30 Days		31-60 Days		61-90 Days		91-180 Days	
Exposure group	Total Number of Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
DPP-4 inhibitors	**2,921,067**	**317,128**	**100.0%**	**172,785**	**100.0%**	**234,598**	**100.0%**	**372,201**	**100.0%**
Female	1,539,902	169,896	53.6%	92,216	53.4%	123,289	52.6%	196,160	52.7%
Male	1,381,165	147,232	46.4%	80,569	46.6%	111,309	47.4%	176,041	47.3%
DPP-4/SGLT-2 inhibitors	**47,692**	**5,376**	**100.0%**	**3,134**	**100.0%**	**4,693**	**100.0%**	**7,009**	**100.0%**
Female	21,858	2,706	50.3%	1,523	48.6%	2,251	48.0%	3,347	47.8%
Male	25,834	2,670	49.7%	1,611	51.4%	2,442	52.0%	3,662	52.2%
GIP/GLP-1 agonists	**374,607**	**72,477**	**100.0%**	**55,726**	**100.0%**	**41,249**	**100.0%**	**78,878**	**100.0%**
Female	232,247	44,624	61.6%	34,787	62.4%	25,509	61.8%	48,524	61.5%
Male	142,360	27,853	38.4%	20,939	37.6%	15,740	38.2%	30,354	38.5%
GLP-1 agonists	**3,321,029**	**382,779**	**100.0%**	**287,825**	**100.0%**	**276,678**	**100.0%**	**542,899**	**100.0%**
Female	1,939,253	227,562	59.4%	172,873	60.1%	162,426	58.7%	324,656	59.8%
Male	1,381,776	155,217	40.6%	114,952	39.9%	114,252	41.3%	218,243	40.2%
SGLT-2 inhibitors	**2,842,393**	**325,747**	**100.0%**	**200,078**	**100.0%**	**284,321**	**100.0%**	**432,599**	**100.0%**
Female	1,322,334	164,083	50.4%	99,948	50.0%	140,307	49.3%	210,407	48.6%
Male	1,520,059	161,664	49.6%	100,130	50.0%	144,014	50.7%	222,192	51.4%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 2c. Categorical Summary of Patients' Cumulative Treatment Episode Durations for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Sex

		181-365 Days		366-730 Days		>730 Days	
Exposure group	Total Number of Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
DPP-4 inhibitors	**2,921,067**	**478,175**	**100.0%**	**519,368**	**100.0%**	**826,812**	**100.0%**
Female	1,539,902	250,300	52.3%	273,140	52.6%	434,901	52.6%
Male	1,381,165	227,875	47.7%	246,228	47.4%	391,911	47.4%
DPP-4/SGLT-2 inhibitors	**47,692**	**9,157**	**100.0%**	**9,441**	**100.0%**	**8,882**	**100.0%**
Female	21,858	4,069	44.4%	4,139	43.8%	3,823	43.0%
Male	25,834	5,088	55.6%	5,302	56.2%	5,059	57.0%
GIP/GLP-1 agonists	**374,607**	**95,430**	**100.0%**	**30,847**	**100.0%**	**0**	**NaN**
Female	232,247	59,500	62.3%	19,303	62.6%	0	NaN
Male	142,360	35,930	37.7%	11,544	37.4%	0	NaN
GLP-1 agonists	**3,321,029**	**679,246**	**100.0%**	**573,841**	**100.0%**	**577,761**	**100.0%**
Female	1,939,253	406,271	59.8%	332,666	58.0%	312,799	54.1%
Male	1,381,776	272,975	40.2%	241,175	42.0%	264,962	45.9%
SGLT-2 inhibitors	**2,842,393**	**544,662**	**100.0%**	**525,190**	**100.0%**	**529,796**	**100.0%**
Female	1,322,334	253,336	46.5%	235,084	44.8%	219,169	41.4%
Male	1,520,059	291,326	53.5%	290,106	55.2%	310,627	58.6%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 2d. Continuous Summary of Patients' Cumulative Treatment Episode Durations for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Sex

		Distribution of Cumulative Treatment Duration, days						
Exposure group	Total Number of Patients	Minimum	Q1	Median	Q3	Maximum	Mean	Standard Deviation
DPP-4 inhibitors	**2,921,067**	**1**	**94**	**328**	**838**	**5,884**	**611.7**	**739.5**
Female	1,539,902	1	90	324	835	5,884	610.7	741.0
Male	1,381,165	1	99	330	840	5,845	612.8	737.9
DPP-4/SGLT-2 inhibitors	**47,692**	**1**	**90**	**266**	**592**	**3,175**	**428.5**	**478.8**
Female	21,858	1	90	240	556	3,175	406.8	463.8
Male	25,834	1	90	270	615	3,172	446.9	490.4
GIP/GLP-1 agonists	**374,607**	**1**	**46**	**112**	**228**	**718**	**150.8**	**127.8**
Female	232,247	1	46	112	230	718	151.3	128.1
Male	142,360	1	46	112	227	694	149.9	127.3
GLP-1 agonists	**3,321,029**	**1**	**84**	**223**	**532**	**5,363**	**413.9**	**517.1**
Female	1,939,253	1	84	210	503	5,363	395.6	497.4
Male	1,381,776	1	86	232	577	5,100	439.4	542.5
SGLT-2 inhibitors	**2,842,393**	**1**	**90**	**240**	**570**	**3,965**	**433.9**	**521.1**
Female	1,322,334	1	90	210	525	3,965	401.0	491.9
Male	1,520,059	1	90	269	624	3,953	462.6	543.5

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; Q = quartile; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 2e. Categorical Summary of Patients' Cumulative Treatment Episode Durations for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Age Group

Exposure group	Total Number of Patients	Number of Patients by Cumulative Treatment Duration							
		1-30 Days		31-60 Days		61-90 Days		91-180 Days	
		Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
DPP-4 inhibitors	**2,921,067**	**317,128**	**100.0%**	**172,785**	**100.0%**	**234,598**	**100.0%**	**372,201**	**100.0%**
0-17 years	1,147	247	0.1%	141	0.1%	113	0.0%	181	0.0%
18-24 years	8,862	1,628	0.5%	922	0.5%	984	0.4%	1,558	0.4%
25-34 years	54,450	8,217	2.6%	4,779	2.8%	5,195	2.2%	8,919	2.4%
35-44 years	184,800	22,727	7.2%	14,283	8.3%	15,399	6.6%	27,566	7.4%
45-64 years	1,036,762	110,627	34.9%	65,805	38.1%	79,150	33.7%	138,426	37.2%
65+ years	1,635,046	173,682	54.8%	86,855	50.3%	133,757	57.0%	195,551	52.5%
DPP-4/SGLT-2 inhibitors	**47,692**	**5,376**	**100.0%**	**3,134**	**100.0%**	**4,693**	**100.0%**	**7,009**	**100.0%**
0-17 years	*****	*****	*****	*****	*****	*****	*****	*****	*****
18-24 years	*****	*****	*****	*****	*****	*****	*****	*****	*****
25-34 years	912	136	2.5%	86	2.7%	75	1.6%	180	2.6%
35-44 years	3,612	477	8.9%	283	9.0%	371	7.9%	583	8.3%
45-64 years	20,371	2,221	41.3%	1,352	43.1%	1,776	37.8%	2,917	41.6%
65+ years	22,623	2,513	46.7%	1,399	44.6%	2,447	52.1%	3,298	47.1%
GIP/GLP-1 agonists	**374,607**	**72,477**	**100.0%**	**55,726**	**100.0%**	**41,249**	**100.0%**	**78,878**	**100.0%**
0-17 years	117	20	0.0%	24	0.0%	*****	*****	23	0.0%
18-24 years	2,919	727	1.0%	589	1.1%	*****	*****	520	0.7%
25-34 years	14,899	3,443	4.8%	2,753	4.9%	1,694	4.1%	2,895	3.7%
35-44 years	45,355	8,871	12.2%	7,143	12.8%	4,867	11.8%	9,031	11.4%
45-64 years	178,931	32,299	44.6%	25,623	46.0%	19,037	46.2%	37,657	47.7%
65+ years	132,386	27,117	37.4%	19,594	35.2%	15,263	37.0%	28,752	36.5%
GLP-1 agonists	**3,321,029**	**382,779**	**100.0%**	**287,825**	**100.0%**	**276,678**	**100.0%**	**542,899**	**100.0%**
0-17 years	10,040	1,699	0.4%	1,404	0.5%	1,062	0.4%	2,225	0.4%
18-24 years	30,428	5,467	1.4%	3,997	1.4%	3,289	1.2%	6,223	1.1%
25-34 years	135,542	21,025	5.5%	15,963	5.5%	13,227	4.8%	25,962	4.8%
35-44 years	364,861	44,859	11.7%	34,331	11.9%	29,344	10.6%	62,532	11.5%
45-64 years	1,433,415	157,519	41.2%	117,857	40.9%	107,409	38.8%	222,535	41.0%
65+ years	1,346,743	152,210	39.8%	114,273	39.7%	122,347	44.2%	223,422	41.2%
SGLT-2 inhibitors	**2,842,393**	**325,747**	**100.0%**	**200,078**	**100.0%**	**284,321**	**100.0%**	**432,599**	**100.0%**

Table 2e. Categorical Summary of Patients' Cumulative Treatment Episode Durations for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Age Group

		Number of Patients by Cumulative Treatment Duration							
		1-30 Days		31-60 Days		61-90 Days		91-180 Days	
Exposure group	Total Number of Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
0-17 years	1,037	197	0.1%	102	0.1%	125	0.0%	182	0.0%
18-24 years	9,331	1,559	0.5%	980	0.5%	1,022	0.4%	1,791	0.4%
25-34 years	53,561	7,684	2.4%	5,122	2.6%	5,513	1.9%	9,255	2.1%
35-44 years	185,470	22,013	6.8%	14,747	7.4%	16,503	5.8%	29,099	6.7%
45-64 years	1,053,786	110,311	33.9%	72,694	36.3%	90,470	31.8%	153,697	35.5%
65+ years	1,539,208	183,983	56.5%	106,433	53.2%	170,688	60.0%	238,575	55.1%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN = Not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

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

Table 2e. Categorical Summary of Patients' Cumulative Treatment Episode Durations for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Age Group

Exposure group	Total Number of Patients	181-365 Days		366-730 Days		>730 Days	
		Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
DPP-4 inhibitors	**2,921,067**	**478,175**	**100.0%**	**519,368**	**100.0%**	**826,812**	**100.0%**
0-17 years	1,147	224	0.0%	162	0.0%	79	0.0%
18-24 years	8,862	1,554	0.3%	1,303	0.3%	913	0.1%
25-34 years	54,450	9,846	2.1%	8,681	1.7%	8,813	1.1%
35-44 years	184,800	33,404	7.0%	32,691	6.3%	38,730	4.7%
45-64 years	1,036,762	179,682	37.6%	193,769	37.3%	269,303	32.6%
65+ years	1,635,046	253,465	53.0%	282,762	54.4%	508,974	61.6%
DPP-4/SGLT-2 inhibitors	**47,692**	**9,157**	**100.0%**	**9,441**	**100.0%**	**8,882**	**100.0%**
0-17 years	*****	*****	*****	*****	*****	*****	*****
18-24 years	*****	*****	*****	*****	*****	*****	*****
25-34 years	912	182	2.0%	161	1.7%	92	1.0%
35-44 years	3,612	690	7.5%	668	7.1%	540	6.1%
45-64 years	20,371	4,092	44.7%	4,175	44.2%	3,838	43.2%
65+ years	22,623	4,159	45.4%	4,413	46.7%	4,394	49.5%
GIP/GLP-1 agonists	**374,607**	**95,430**	**100.0%**	**30,847**	**100.0%**	**0**	**NaN**
0-17 years	117	31	0.0%	*****	*****	0	NaN
18-24 years	2,919	580	0.6%	*****	*****	0	NaN
25-34 years	14,899	3,280	3.4%	834	2.7%	0	NaN
35-44 years	45,355	11,483	12.0%	3,960	12.8%	0	NaN
45-64 years	178,931	47,299	49.6%	17,016	55.2%	0	NaN
65+ years	132,386	32,757	34.3%	8,903	28.9%	0	NaN
GLP-1 agonists	**3,321,029**	**679,246**	**100.0%**	**573,841**	**100.0%**	**577,761**	**100.0%**
0-17 years	10,040	2,191	0.3%	1,139	0.2%	320	0.1%
18-24 years	30,428	6,399	0.9%	3,484	0.6%	1,569	0.3%
25-34 years	135,542	29,587	4.4%	18,706	3.3%	11,072	1.9%
35-44 years	364,861	81,391	12.0%	63,335	11.0%	49,069	8.5%
45-64 years	1,433,415	301,469	44.4%	267,051	46.5%	259,575	44.9%
65+ years	1,346,743	258,209	38.0%	220,126	38.4%	256,156	44.3%

Table 2e. Categorical Summary of Patients' Cumulative Treatment Episode Durations for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Age Group

		181-365 Days		366-730 Days		>730 Days	
Exposure group	Total Number of Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
SGLT-2 inhibitors	**2,842,393**	**544,662**	**100.0%**	**525,190**	**100.0%**	**529,796**	**100.0%**
0-17 years	1,037	216	0.0%	146	0.0%	69	0.0%
18-24 years	9,331	1,833	0.3%	1,352	0.3%	794	0.1%
25-34 years	53,561	10,277	1.9%	8,484	1.6%	7,226	1.4%
35-44 years	185,470	35,603	6.5%	33,164	6.3%	34,341	6.5%
45-64 years	1,053,786	201,135	36.9%	203,024	38.7%	222,455	42.0%
65+ years	1,539,208	295,598	54.3%	279,020	53.1%	264,911	50.0%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN = Not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

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

Table 2f. Continuous Summary of Patients' Cumulative Treatment Episode Durations for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Age Group

Exposure group	Total Number of Patients	Distribution of Cumulative Treatment Duration, days						
		Minimum	Q1	Median	Q3	Maximum	Mean	Standard Deviation
DPP-4 inhibitors	**2,921,067**	**1**	**94**	**328**	**838**	**5,884**	**611.7**	**739.5**
0-17 years	1,147	1	60	120	314	1,950	242.9	285.7
18-24 years	8,862	1	60	150	366	4,634	304.7	426.6
25-34 years	54,450	1	75	185	491	5,043	399.5	545.5
35-44 years	184,800	1	90	240	630	5,845	481.1	617.6
45-64 years	1,036,762	1	96	300	758	5,884	561.7	674.8
65+ years	1,635,046	1	109	360	930	5,779	667.2	790.9
DPP-4/SGLT-2 inhibitors	**47,692**	**1**	**90**	**266**	**592**	**3,175**	**428.5**	**478.8**
0-17 years	*****	30	90	270	480	1,170	359.1	361.4
18-24 years	*****	4	67	180	360	2,553	291.5	363.9
25-34 years	912	2	68	180	390	2,580	299.8	338.4
35-44 years	3,612	1	90	210	502	3,054	377.4	450.6
45-64 years	20,371	1	90	270	600	3,175	434.8	477.8
65+ years	22,623	1	90	268	600	3,029	437.2	488.2
GIP/GLP-1 agonists	**374,607**	**1**	**46**	**112**	**228**	**718**	**150.8**	**127.8**
0-17 years	117	1	48	112	218	533	145.7	124.7
18-24 years	2,919	1	31	75	174	633	119.4	112.7
25-34 years	14,899	1	35	84	196	673	130.1	117.9
35-44 years	45,355	1	44	112	230	677	151.1	129.8
45-64 years	178,931	1	50	115	244	717	158.2	131.6
65+ years	132,386	1	45	108	220	718	143.6	122.3
GLP-1 agonists	**3,321,029**	**1**	**84**	**223**	**532**	**5,363**	**413.9**	**517.1**
0-17 years	10,040	1	58	120	254	2,814	198.4	225.0
18-24 years	30,428	1	56	123	274	4,425	219.4	278.9
25-34 years	135,542	1	60	150	330	4,803	271.5	355.4
35-44 years	364,861	1	84	203	448	5,233	359.4	450.8
45-64 years	1,433,415	1	90	240	560	5,363	426.0	513.6
65+ years	1,346,743	1	84	219	563	5,319	436.0	551.4

Table 2f. Continuous Summary of Patients' Cumulative Treatment Episode Durations for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Age Group

Exposure group	Total Number of Patients	Distribution of Cumulative Treatment Duration, days						
		Minimum	Q1	Median	Q3	Maximum	Mean	Standard Deviation
SGLT-2 inhibitors	**2,842,393**	**1**	**90**	**240**	**570**	**3,965**	**433.9**	**521.1**
0-17 years	1,037	2	60	150	330	2,730	247.1	285.9
18-24 years	9,331	1	60	150	353	3,747	274.6	345.6
25-34 years	53,561	1	71	180	448	3,730	347.4	441.6
35-44 years	185,470	1	90	239	570	3,867	429.9	521.4
45-64 years	1,053,786	1	90	270	631	3,965	469.4	543.9
65+ years	1,539,208	1	90	223	540	3,890	414.3	506.8

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; Q = quartile; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 2g. Categorical Summary of Patients' Cumulative Treatment Episode Durations for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Type 1 Diabetes Mellitus (T1DM) (>50% Code Days)

		Number of Patients by Cumulative Treatment Duration							
		1-30 Days		31-60 Days		61-90 Days		91-180 Days	
Exposure group	Total Number of Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
DPP-4 inhibitors	**2,921,067**	**317,128**	**100.0%**	**172,785**	**100.0%**	**234,598**	**100.0%**	**372,201**	**100.0%**
With T1DM	17,813	2,282	0.7%	1,216	0.7%	1,465	0.6%	2,288	0.6%
Without T1DM	2,903,254	314,846	99.3%	171,569	99.3%	233,133	99.4%	369,913	99.4%
DPP-4/SGLT-2 inhibitors	**47,692**	**5,376**	**100.0%**	**3,134**	**100.0%**	**4,693**	**100.0%**	**7,009**	**100.0%**
With T1DM	209	23	0.4%	22	0.7%	14	0.3%	30	0.4%
Without T1DM	47,483	5,353	99.6%	3,112	99.3%	4,679	99.7%	6,979	99.6%
GIP/GLP-1 agonists	**374,607**	**72,477**	**100.0%**	**55,726**	**100.0%**	**41,249**	**100.0%**	**78,878**	**100.0%**
With T1DM	2,733	536	0.7%	362	0.6%	273	0.7%	557	0.7%
Without T1DM	371,874	71,941	99.3%	55,364	99.4%	40,976	99.3%	78,321	99.3%
GLP-1 agonists	**3,321,029**	**382,779**	**100.0%**	**287,825**	**100.0%**	**276,678**	**100.0%**	**542,899**	**100.0%**
With T1DM	30,627	4,021	1.1%	2,794	1.0%	2,708	1.0%	4,895	0.9%
Without T1DM	3,290,402	378,758	98.9%	285,031	99.0%	273,970	99.0%	538,004	99.1%
SGLT-2 inhibitors	**2,842,393**	**325,747**	**100.0%**	**200,078**	**100.0%**	**284,321**	**100.0%**	**432,599**	**100.0%**
With T1DM	18,482	2,235	0.7%	1,341	0.7%	1,898	0.7%	2,710	0.6%
Without T1DM	2,823,911	323,512	99.3%	198,737	99.3%	282,423	99.3%	429,889	99.4%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors; T1DM = type 1 diabetes mellitus and T2DM = type 2 diabetes mellitus.

Table 2g. Categorical Summary of Patients' Cumulative Treatment Episode Durations for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Type 1 Diabetes Mellitus (T1DM) (>50% Code Days)

		181-365 Days		366-730 Days		>730 Days	
Exposure group	Total Number of Patients	Number of Patients	Percent of Total	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
DPP-4 inhibitors	**2,921,067**	**478,175**	**100.0%**	**519,368**	**100.0%**	**826,812**	**100.0%**
With T1DM	17,813	2,821	0.6%	2,993	0.6%	4,748	0.6%
Without T1DM	2,903,254	475,354	99.4%	516,375	99.4%	822,064	99.4%
DPP-4/SGLT-2 inhibitors	**47,692**	**9,157**	**100.0%**	**9,441**	**100.0%**	**8,882**	**100.0%**
With T1DM	209	48	0.5%	38	0.4%	34	0.4%
Without T1DM	47,483	9,109	99.5%	9,403	99.6%	8,848	99.6%
GIP/GLP-1 agonists	**374,607**	**95,430**	**100.0%**	**30,847**	**100.0%**	**0**	**NaN**
With T1DM	2,733	732	0.8%	273	0.9%	0	NaN
Without T1DM	371,874	94,698	99.2%	30,574	99.1%	0	NaN
GLP-1 agonists	**3,321,029**	**679,246**	**100.0%**	**573,841**	**100.0%**	**577,761**	**100.0%**
With T1DM	30,627	5,906	0.9%	5,129	0.9%	5,174	0.9%
Without T1DM	3,290,402	673,340	99.1%	568,712	99.1%	572,587	99.1%
SGLT-2 inhibitors	**2,842,393**	**544,662**	**100.0%**	**525,190**	**100.0%**	**529,796**	**100.0%**
With T1DM	18,482	3,331	0.6%	3,143	0.6%	3,824	0.7%
Without T1DM	2,823,911	541,331	99.4%	522,047	99.4%	525,972	99.3%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors; T1DM = type 1 diabetes mellitus and T2DM = type 2 diabetes mellitus.

Table 2h. Continuous Summary of Patients' Cumulative Treatment Episode Durations for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Type 1 Diabetes Mellitus (T1DM) (>50% Code Days)

		Distribution of Cumulative Treatment Duration, days						
Expsoure group	Total Number of Patients	Minimum	Q1	Median	Q3	Maximum	Mean	Standard Deviation
DPP-4 inhibitors	**2,921,067**	**1**	**94**	**328**	**838**	**5,884**	**611.7**	**739.5**
With T1DM	17,813	1	90	285	788	5,723	586.1	746.0
Without T1DM	2,903,254	1	95	329	839	5,884	611.9	739.5
DPP-4/SGLT-2 inhibitors	**47,692**	**1**	**90**	**266**	**592**	**3,175**	**428.5**	**478.8**
With T1DM	209	15	90	263	500	2,497	393.0	435.8
Without T1DM	47,483	1	90	266	593	3,175	428.7	479.0
GIP/GLP-1 agonists	**374,607**	**1**	**46**	**112**	**228**	**718**	**150.8**	**127.8**
With T1DM	2,733	1	49	120	252	652	161.7	135.2
Without T1DM	371,874	1	46	112	228	718	150.7	127.7
GLP-1 agonists	**3,321,029**	**1**	**84**	**223**	**532**	**5,363**	**413.9**	**517.1**
With T1DM	30,627	1	84	208	511	4,729	408.8	534.8
Without T1DM	3,290,402	1	84	224	532	5,363	413.9	517.0
SGLT-2 inhibitors	**2,842,393**	**1**	**90**	**240**	**570**	**3,965**	**433.9**	**521.1**
With T1DM	18,482	1	90	240	609	3,779	471.3	591.7
Without T1DM	2,823,911	1	90	240	570	3,965	433.7	520.6

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; Q = quartile; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors; T1DM = type 1 diabetes mellitus and T2DM = type 2 diabetes mellitus.

Table 2i. Categorical Summary of Patients' Cumulative Treatment Episode Durations for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Type 2 Diabetes Mellitus (T2DM) (and No Type 1 Diabetes Mellitus (T1DM) Codes)

		Number of Patients by Cumulative Treatment Duration							
		1-30 Days		31-60 Days		61-90 Days		91-180 Days	
Exposure group	Total Number of Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
DPP-4 inhibitors	**2,921,067**	**317,128**	**100.0%**	**172,785**	**100.0%**	**234,598**	**100.0%**	**372,201**	**100.0%**
With T2DM	2,542,947	268,128	84.5%	147,319	85.3%	204,017	87.0%	322,740	86.7%
Without T2DM	378,120	49,000	15.5%	25,466	14.7%	30,581	13.0%	49,461	13.3%
DPP-4/SGLT-2 inhibitors	**47,692**	**5,376**	**100.0%**	**3,134**	**100.0%**	**4,693**	**100.0%**	**7,009**	**100.0%**
With T2DM	43,824	4,871	90.6%	2,847	90.8%	4,338	92.4%	6,428	91.7%
Without T2DM	3,868	505	9.4%	287	9.2%	355	7.6%	581	8.3%
GIP/GLP-1 agonists	**374,607**	**72,477**	**100.0%**	**55,726**	**100.0%**	**41,249**	**100.0%**	**78,878**	**100.0%**
With T2DM	269,915	48,884	67.4%	37,164	66.7%	29,318	71.1%	59,585	75.5%
Without T2DM	104,692	23,593	32.6%	18,562	33.3%	11,931	28.9%	19,293	24.5%
GLP-1 agonists	**3,321,029**	**382,779**	**100.0%**	**287,825**	**100.0%**	**276,678**	**100.0%**	**542,899**	**100.0%**
With T2DM	2,535,797	273,951	71.6%	206,912	71.9%	205,501	74.3%	398,457	73.4%
Without T2DM	785,232	108,828	28.4%	80,913	28.1%	71,177	25.7%	144,442	26.6%
SGLT-2 inhibitors	**2,842,393**	**325,747**	**100.0%**	**200,078**	**100.0%**	**284,321**	**100.0%**	**432,599**	**100.0%**
With T2DM	2,378,768	258,889	79.5%	160,647	80.3%	232,379	81.7%	354,946	82.0%
Without T2DM	463,625	66,858	20.5%	39,431	19.7%	51,942	18.3%	77,653	18.0%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors; T1DM = type 1 diabetes mellitus and T2DM = type 2 diabetes mellitus.

Table 2i. Categorical Summary of Patients' Cumulative Treatment Episode Durations for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Type 2 Diabetes Mellitus (T2DM) (and No Type 1 Diabetes Mellitus (T1DM) Codes)

		181-365 Days		366-730 Days		>730 Days	
Exposure group	Total Number of Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
DPP-4 inhibitors	**2,921,067**	**478,175**	**100.0%**	**519,368**	**100.0%**	**826,812**	**100.0%**
With T2DM	2,542,947	417,155	87.2%	455,283	87.7%	728,305	88.1%
Without T2DM	378,120	61,020	12.8%	64,085	12.3%	98,507	11.9%
DPP-4/SGLT-2 inhibitors	**47,692**	**9,157**	**100.0%**	**9,441**	**100.0%**	**8,882**	**100.0%**
With T2DM	43,824	8,403	91.8%	8,739	92.6%	8,198	92.3%
Without T2DM	3,868	754	8.2%	702	7.4%	684	7.7%
GIP/GLP-1 agonists	**374,607**	**95,430**	**100.0%**	**30,847**	**100.0%**	**0**	**NaN**
With T2DM	269,915	71,818	75.3%	23,146	75.0%	0	NaN
Without T2DM	104,692	23,612	24.7%	7,701	25.0%	0	NaN
GLP-1 agonists	**3,321,029**	**679,246**	**100.0%**	**573,841**	**100.0%**	**577,761**	**100.0%**
With T2DM	2,535,797	499,601	73.6%	456,586	79.6%	494,789	85.6%
Without T2DM	785,232	179,645	26.4%	117,255	20.4%	82,972	14.4%
SGLT-2 inhibitors	**2,842,393**	**544,662**	**100.0%**	**525,190**	**100.0%**	**529,796**	**100.0%**
With T2DM	2,378,768	451,994	83.0%	446,916	85.1%	472,997	89.3%
Without T2DM	463,625	92,668	17.0%	78,274	14.9%	56,799	10.7%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors; T1DM = type 1 diabetes mellitus and T2DM = type 2 diabetes mellitus.

Table 2j. Continuous Summary of Patients' Cumulative Treatment Episode Durations for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by T2DM (and No Type 1 Diabetes Mellitus (T1DM) Codes)

		Distribution of Cumulative Treatment Duration, days						
Expsoure group	Total Number of Patients	Minimum	Q1	Median	Q3	Maximum	Mean	Standard Deviation
DPP-4 inhibitors	**2,921,067**	**1**	**94**	**328**	**838**	**5,884**	**611.7**	**739.5**
With T2DM	2,542,947	1	102	330	840	5,884	617.7	741.9
Without T2DM	378,120	1	90	274	765	5,771	571.3	722.3
DPP-4/SGLT-2 inhibitors	**47,692**	**1**	**90**	**266**	**592**	**3,175**	**428.5**	**478.8**
With T2DM	43,824	1	90	270	598	3,175	429.9	478.0
Without T2DM	3,868	1	90	240	540	3,029	413.1	487.3
GIP/GLP-1 agonists	**374,607**	**1**	**46**	**112**	**228**	**718**	**150.8**	**127.8**
With T2DM	269,915	1	52	114	237	718	155.6	127.9
Without T2DM	104,692	1	36	84	213	693	138.2	126.5
GLP-1 agonists	**3,321,029**	**1**	**84**	**223**	**532**	**5,363**	**413.9**	**517.1**
With T2DM	2,535,797	1	90	240	588	5,363	442.8	536.2
Without T2DM	785,232	1	69	174	373	5,319	320.5	437.1
SGLT-2 inhibitors	**2,842,393**	**1**	**90**	**240**	**570**	**3,965**	**433.9**	**521.1**
With T2DM	2,378,768	1	90	255	604	3,965	451.4	531.8
Without T2DM	463,625	1	76	180	430	3,899	344.2	451.2

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; Q = quartile; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors; T1DM = type 1 diabetes mellitus and T2DM = type 2 diabetes mellitus.

Table 2k. Categorical Summary of Patients' Cumulative Treatment Episode Durations for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Obesity

		Number of Patients by Cumulative Treatment Duration							
		1-30 Days		31-60 Days		61-90 Days		91-180 Days	
Exposure group	Total Number of Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
DPP-4 inhibitors	**2,921,067**	**317,128**	**100.0%**	**172,785**	**100.0%**	**234,598**	**100.0%**	**372,201**	**100.0%**
With Obesity	852,961	98,587	31.1%	52,900	30.6%	74,518	31.8%	113,987	30.6%
Without Obesity	2,068,106	218,541	68.9%	119,885	69.4%	160,080	68.2%	258,214	69.4%
DPP-4/SGLT-2 inhibitors	**47,692**	**5,376**	**100.0%**	**3,134**	**100.0%**	**4,693**	**100.0%**	**7,009**	**100.0%**
With Obesity	18,596	2,070	38.5%	1,173	37.4%	1,942	41.4%	2,774	39.6%
Without Obesity	29,096	3,306	61.5%	1,961	62.6%	2,751	58.6%	4,235	60.4%
GIP/GLP-1 agonists	**374,607**	**72,477**	**100.0%**	**55,726**	**100.0%**	**41,249**	**100.0%**	**78,878**	**100.0%**
With Obesity	255,619	49,169	67.8%	38,452	69.0%	28,261	68.5%	53,590	67.9%
Without Obesity	118,988	23,308	32.2%	17,274	31.0%	12,988	31.5%	25,288	32.1%
GLP-1 agonists	**3,321,029**	**382,779**	**100.0%**	**287,825**	**100.0%**	**276,678**	**100.0%**	**542,899**	**100.0%**
With Obesity	1,770,426	196,015	51.2%	154,860	53.8%	148,422	53.6%	299,379	55.1%
Without Obesity	1,550,603	186,764	48.8%	132,965	46.2%	128,256	46.4%	243,520	44.9%
SGLT-2 inhibitors	**2,842,393**	**325,747**	**100.0%**	**200,078**	**100.0%**	**284,321**	**100.0%**	**432,599**	**100.0%**
With Obesity	1,167,881	131,926	40.5%	81,875	40.9%	118,040	41.5%	178,512	41.3%
Without Obesity	1,674,512	193,821	59.5%	118,203	59.1%	166,281	58.5%	254,087	58.7%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 2k. Categorical Summary of Patients' Cumulative Treatment Episode Durations for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Obesity

Exposure group	Total Number of Patients	181-365 Days		366-730 Days		>730 Days	
		Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
DPP-4 inhibitors	**2,921,067**	**478,175**	**100.0%**	**519,368**	**100.0%**	**826,812**	**100.0%**
With Obesity	852,961	143,793	30.1%	152,032	29.3%	217,144	26.3%
Without Obesity	2,068,106	334,382	69.9%	367,336	70.7%	609,668	73.7%
DPP-4/SGLT-2 inhibitors	**47,692**	**9,157**	**100.0%**	**9,441**	**100.0%**	**8,882**	**100.0%**
With Obesity	18,596	3,645	39.8%	3,663	38.8%	3,329	37.5%
Without Obesity	29,096	5,512	60.2%	5,778	61.2%	5,553	62.5%
GIP/GLP-1 agonists	**374,607**	**95,430**	**100.0%**	**30,847**	**100.0%**	**0**	**NaN**
With Obesity	255,619	64,850	68.0%	21,297	69.0%	0	NaN
Without Obesity	118,988	30,580	32.0%	9,550	31.0%	0	NaN
GLP-1 agonists	**3,321,029**	**679,246**	**100.0%**	**573,841**	**100.0%**	**577,761**	**100.0%**
With Obesity	1,770,426	379,833	55.9%	307,204	53.5%	284,713	49.3%
Without Obesity	1,550,603	299,413	44.1%	266,637	46.5%	293,048	50.7%
SGLT-2 inhibitors	**2,842,393**	**544,662**	**100.0%**	**525,190**	**100.0%**	**529,796**	**100.0%**
With Obesity	1,167,881	223,927	41.1%	219,240	41.7%	214,361	40.5%
Without Obesity	1,674,512	320,735	58.9%	305,950	58.3%	315,435	59.5%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 2l. Continuous Summary of Patients' Cumulative Treatment Episode Durations for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Obesity

		Distribution of Cumulative Treatment Duration, days						
Expsoure group	Total Number of Patients	Minimum	Q1	Median	Q3	Maximum	Mean	Standard Deviation
DPP-4 inhibitors	**2,921,067**	**1**	**94**	**328**	**838**	**5,884**	**611.7**	**739.5**
With Obesity	852,961	1	90	289	750	5,723	548.5	661.0
Without Obesity	2,068,106	1	107	332	870	5,884	637.8	768.1
DPP-4/SGLT-2 inhibitors	**47,692**	**1**	**90**	**266**	**592**	**3,175**	**428.5**	**478.8**
With Obesity	18,596	1	90	254	570	3,175	416.5	459.1
Without Obesity	29,096	1	90	270	600	3,172	436.2	490.8
GIP/GLP-1 agonists	**374,607**	**1**	**46**	**112**	**228**	**718**	**150.8**	**127.8**
With Obesity	255,619	1	46	112	229	717	150.9	128.3
Without Obesity	118,988	1	46	112	228	718	150.5	126.7
GLP-1 agonists	**3,321,029**	**1**	**84**	**223**	**532**	**5,363**	**413.9**	**517.1**
With Obesity	1,770,426	1	84	217	504	5,363	394.3	484.5
Without Obesity	1,550,603	1	84	224	568	5,359	436.2	551.2
SGLT-2 inhibitors	**2,842,393**	**1**	**90**	**240**	**570**	**3,965**	**433.9**	**521.1**
With Obesity	1,167,881	1	90	240	570	3,965	426.8	503.3
Without Obesity	1,674,512	1	90	240	574	3,906	438.9	533.0

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; Q = quartile; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 3a. Categorical Summary of All Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

Exposure group	Total Number of Episodes	Number of Treatment Episodes by Duration							
		1-30 Days		31-60 Days		61-90 Days		91-180 Days	
		Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes
DPP-4 inhibitors	16,367,956	7,657,415	46.8%	2,034,452	12.4%	3,063,150	18.7%	1,756,135	10.7%
DPP-4/SGLT-2 inhibitors	198,494	90,953	45.8%	24,683	12.4%	40,029	20.2%	21,299	10.7%
GIP/GLP-1 agonists	754,950	380,997	50.5%	129,821	17.2%	78,364	10.4%	89,034	11.8%
GLP-1 agonists	15,321,312	7,999,769	52.2%	2,336,299	15.2%	2,070,553	13.5%	1,461,915	9.5%
SGLT-2 inhibitors	10,587,543	4,491,170	42.4%	1,314,704	12.4%	2,118,535	20.0%	1,256,413	11.9%
Canagliflozin	2,128,537	1,056,429	49.6%	270,679	12.7%	355,418	16.7%	214,610	10.1%
Saxenda	253,666	163,312	64.4%	39,000	15.4%	24,050	9.5%	17,476	6.9%
Ozempic	4,426,062	2,152,076	48.6%	758,433	17.1%	618,282	14.0%	456,825	10.3%
Wegovy	385,455	214,431	55.6%	64,229	16.7%	34,893	9.1%	39,851	10.3%
Rybelsus	664,437	331,593	49.9%	87,478	13.2%	109,101	16.4%	68,779	10.4%
Mounjaro	723,171	359,918	49.8%	122,123	16.9%	75,706	10.5%	88,717	12.3%
Zepbound	33,124	22,143	66.8%	7,962	24.0%	2,741	8.3%	*****	*****

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

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

Table 3a. Categorical Summary of All Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

Exposure group	Total Number of Episodes	181-365 Days		366-730 Days		>730 Days	
		Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes
DPP-4 inhibitors	16,367,956	1,057,193	6.5%	511,701	3.1%	287,910	1.8%
DPP-4/SGLT-2 inhibitors	198,494	12,727	6.4%	6,129	3.1%	2,674	1.3%
GIP/GLP-1 agonists	754,950	62,304	8.3%	14,430	1.9%	0	0.0%
GLP-1 agonists	15,321,312	867,216	5.7%	396,646	2.6%	188,914	1.2%
SGLT-2 inhibitors	10,587,543	800,365	7.6%	408,430	3.9%	197,926	1.9%
Canagliflozin	2,128,537	129,456	6.1%	65,305	3.1%	36,640	1.7%
Saxenda	253,666	6,968	2.7%	2,347	0.9%	513	0.2%
Ozempic	4,426,062	280,781	6.3%	117,922	2.7%	41,743	0.9%
Wegovy	385,455	26,299	6.8%	5,207	1.4%	545	0.1%
Rybelsus	664,437	40,712	6.1%	20,467	3.1%	6,307	0.9%
Mounjaro	723,171	62,290	8.6%	14,417	2.0%	0	0.0%
Zepbound	33,124	*****	*****	0	0.0%	0	0.0%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

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

Table 3b. Continuous Summary of All Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

Exposure group	Total Number of Episodes	Distribution of Treatment Episode Durations, days						
		Minimum	Q1	Median	Q3	Maximum	Mean	Standard Deviation
DPP-4 inhibitors	16,367,956	1	30	60	90	5,884	109.2	201.0
DPP-4/SGLT-2 inhibitors	198,494	1	30	60	90	2,987	103.0	161.9
GIP/GLP-1 agonists	754,950	1	28	30	84	718	74.8	84.8
GLP-1 agonists	15,321,312	1	28	30	84	5,093	89.7	159.8
SGLT-2 inhibitors	10,587,543	1	30	60	95	3,965	116.5	190.4
Canagliflozin	2,128,537	1	30	40	90	3,881	105.1	188.7
Saxenda	253,666	1	30	30	60	2,816	58.8	78.7
Ozempic	4,426,062	1	28	41	84	2,299	87.3	135.7
Wegovy	385,455	1	28	28	84	1,030	69.6	84.3
Rybelsus	664,437	1	30	31	90	1,569	92.1	131.5
Mounjaro	723,171	1	28	31	84	718	76.7	86.0
Zepbound	33,124	1	17	28	42	185	31.5	21.2

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; Q = quartile; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 3c. Categorical Summary of All Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Sex

		Number of Treatment Episodes by Duration					
		1-30 Days		31-60 Days		61-90 Days	
Exposure group	Total Number of Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes
DPP-4 inhibitors	**16,367,956**	**7,657,415**	**100.0%**	**2,034,452**	**100.0%**	**3,063,150**	**100.0%**
Female	8,643,527	4,065,136	53.1%	1,083,912	53.3%	1,586,893	51.8%
Male	7,724,429	3,592,279	46.9%	950,540	46.7%	1,476,257	48.2%
DPP-4/SGLT-2 inhibitors	**198,494**	**90,953**	**100.0%**	**24,683**	**100.0%**	**40,029**	**100.0%**
Female	89,127	42,042	46.2%	11,284	45.7%	17,330	43.3%
Male	109,367	48,911	53.8%	13,399	54.3%	22,699	56.7%
GIP/GLP-1 agonists	**754,950**	**380,997**	**100.0%**	**129,821**	**100.0%**	**78,364**	**100.0%**
Female	469,999	238,586	62.6%	80,978	62.4%	47,818	61.0%
Male	284,951	142,411	37.4%	48,843	37.6%	30,546	39.0%
GLP-1 agonists	**15,321,312**	**7,999,769**	**100.0%**	**2,336,299**	**100.0%**	**2,070,553**	**100.0%**
Female	8,845,624	4,691,305	58.6%	1,368,767	58.6%	1,147,879	55.4%
Male	6,475,688	3,308,464	41.4%	967,532	41.4%	922,674	44.6%
SGLT-2 inhibitors	**10,587,543**	**4,491,170**	**100.0%**	**1,314,704**	**100.0%**	**2,118,535**	**100.0%**
Female	4,767,379	2,094,551	46.6%	603,353	45.9%	919,600	43.4%
Male	5,820,164	2,396,619	53.4%	711,351	54.1%	1,198,935	56.6%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 3c. Categorical Summary of All Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Sex

		91-180 Days		181-365 Days		366-730 Days		>730 Days	
Exposure group	Total Number of Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes
DPP-4 inhibitors	**16,367,956**	**1,756,135**	**100.0%**	**1,057,193**	**100.0%**	**511,701**	**100.0%**	**287,910**	**100.0%**
Female	8,643,527	926,444	52.8%	557,297	52.7%	271,460	53.1%	152,385	52.9%
Male	7,724,429	829,691	47.2%	499,896	47.3%	240,241	46.9%	135,525	47.1%
DPP-4/SGLT-2 inhibitors	**198,494**	**21,299**	**100.0%**	**12,727**	**100.0%**	**6,129**	**100.0%**	**2,674**	**100.0%**
Female	89,127	9,223	43.3%	5,468	43.0%	2,659	43.4%	1,121	41.9%
Male	109,367	12,076	56.7%	7,259	57.0%	3,470	56.6%	1,553	58.1%
GIP/GLP-1 agonists	**754,950**	**89,034**	**100.0%**	**62,304**	**100.0%**	**14,430**	**100.0%**	**0**	**NaN**
Female	469,999	54,681	61.4%	38,644	62.0%	9,292	64.4%	0	NaN
Male	284,951	34,353	38.6%	23,660	38.0%	5,138	35.6%	0	NaN
GLP-1 agonists	**15,321,312**	**1,461,915**	**100.0%**	**867,216**	**100.0%**	**396,646**	**100.0%**	**188,914**	**100.0%**
Female	8,845,624	833,064	57.0%	488,713	56.4%	218,288	55.0%	97,608	51.7%
Male	6,475,688	628,851	43.0%	378,503	43.6%	178,358	45.0%	91,306	48.3%
SGLT-2 inhibitors	**10,587,543**	**1,256,413**	**100.0%**	**800,365**	**100.0%**	**408,430**	**100.0%**	**197,926**	**100.0%**
Female	4,767,379	553,439	44.0%	344,831	43.1%	171,819	42.1%	79,786	40.3%
Male	5,820,164	702,974	56.0%	455,534	56.9%	236,611	57.9%	118,140	59.7%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 3D. Continuous Summary of All Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Sex

		Distribution of Treatment Episode Durations, days						
Exposure group	Total Number of Episodes	Minimum	Q1	Median	Q3	Maximum	Mean	Standard Deviation
DPP-4 inhibitors	**16,367,956**	**1**	**30**	**60**	**90**	**5,884**	**109.2**	**201.0**
Female	8,643,527	1	30	60	90	5,884	108.8	201.1
Male	7,724,429	1	30	60	90	5,768	109.6	201.0
DPP-4/SGLT-2 inhibitors	**198,494**	**1**	**30**	**60**	**90**	**2,987**	**103.0**	**161.9**
Female	89,127	1	30	60	90	2,987	99.8	157.7
Male	109,367	1	30	60	90	2,952	105.6	165.2
GIP/GLP-1 agonists	**754,950**	**1**	**28**	**30**	**84**	**718**	**74.8**	**84.8**
Female	469,999	1	28	30	84	718	74.8	85.3
Male	284,951	1	28	31	84	694	74.9	84.0
GLP-1 agonists	**15,321,312**	**1**	**28**	**30**	**84**	**5,093**	**89.7**	**159.8**
Female	8,845,624	1	28	30	84	5,093	86.7	152.7
Male	6,475,688	1	28	30	90	5,067	93.8	169.1
SGLT-2 inhibitors	**10,587,543**	**1**	**30**	**60**	**95**	**3,965**	**116.5**	**190.4**
Female	4,767,379	1	30	60	90	3,965	111.2	181.6
Male	5,820,164	1	30	60	114	3,881	120.8	197.3

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; Q = quartile; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 3e. Categorical Summary of All Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Age Group

		Number of Treatment Episodes by Duration							
		1-30 Days		31-60 Days		61-90 Days		91-180 Days	
Exposure group	Total Number of Episodes	Number of Episodes	Percent of Total	Number of Episodes	Percent of Total	Number of Episodes	Percent of Total	Number of Episodes	Percent of Total
DPP-4	**16,367,956**	**7,657,415**	**100.0%**	**2,034,452**	**100.0%**	**3,063,150**	**100.0%**	**1,756,135**	**100.0%**
0-17 years	4,383	2,863	0.0%	600	0.0%	412	0.0%	284	0.0%
18-24 years	35,272	21,093	0.3%	4,648	0.2%	4,524	0.1%	2,759	0.2%
25-34 years	267,878	156,931	2.0%	35,319	1.7%	35,642	1.2%	21,258	1.2%
35-44 years	1,057,119	605,136	7.9%	137,869	6.8%	147,566	4.8%	87,730	5.0%
45-64 years	5,899,263	3,011,791	39.3%	773,929	38.0%	951,086	31.0%	579,261	33.0%
65+ years	9,104,041	3,859,601	50.4%	1,082,087	53.2%	1,923,920	62.8%	1,064,843	60.6%
DPP-4/SGLT-2 inhibitors	**198,494**	**90,953**	**100.0%**	**24,683**	**100.0%**	**40,029**	**100.0%**	**21,299**	**100.0%**
0-17 years	51	*****	*****	*****	*****	*****	*****	0	0.0%
18-24 years	673	*****	*****	*****	*****	*****	*****	*****	*****
25-34 years	3,541	1,967	2.2%	489	2.0%	555	1.4%	*****	*****
35-44 years	16,362	9,080	10.0%	2,110	8.5%	2,516	6.3%	1,376	6.5%
45-64 years	90,035	44,274	48.7%	11,804	47.8%	15,801	39.5%	8,983	42.2%
65+ years	87,832	35,187	38.7%	10,201	41.3%	21,069	52.6%	10,580	49.7%
GIP/GLP-1 agonists	**754,950**	**380,997**	**100.0%**	**129,821**	**100.0%**	**78,364**	**100.0%**	**89,034**	**100.0%**
0-17 years	232	123	0.0%	42	0.0%	17	0.0%	30	0.0%
18-24 years	5,778	3,339	0.9%	1,026	0.8%	531	0.7%	520	0.6%
25-34 years	29,204	16,013	4.2%	5,258	4.1%	2,721	3.5%	2,864	3.2%
35-44 years	91,895	47,609	12.5%	16,017	12.3%	8,743	11.2%	9,937	11.2%
45-64 years	362,760	180,004	47.2%	61,790	47.6%	36,982	47.2%	43,243	48.6%
65+ years	265,081	133,909	35.1%	45,688	35.2%	29,370	37.5%	32,440	36.4%

Table 3e. Categorical Summary of All Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Age Group

		Number of Treatment Episodes by Duration							
		1-30 Days		31-60 Days		61-90 Days		91-180 Days	
Exposure group	Total Number of Episodes	Number of Episodes	Percent of Total	Number of Episodes	Percent of Total	Number of Episodes	Percent of Total	Number of Episodes	Percent of Total
GLP-1 agonists	**15,321,312**	**7,999,769**	**100.0%**	**2,336,299**	**100.0%**	**2,070,553**	**100.0%**	**1,461,915**	**100.0%**
0-17 years	33,171	20,894	0.3%	5,494	0.2%	2,773	0.1%	2,394	0.2%
18-24 years	102,096	61,774	0.8%	16,415	0.7%	10,041	0.5%	7,924	0.5%
25-34 years	523,504	309,083	3.9%	83,421	3.6%	53,071	2.6%	42,988	2.9%
35-44 years	1,682,259	959,328	12.0%	260,333	11.1%	185,485	9.0%	145,091	9.9%
45-64 years	6,873,086	3,678,457	46.0%	1,044,125	44.7%	854,398	41.3%	639,454	43.7%
65+ years	6,107,196	2,970,233	37.1%	926,511	39.7%	964,785	46.6%	624,064	42.7%
SGLT-2 inhibitors	**10,587,543**	**4,491,170**	**100.0%**	**1,314,704**	**100.0%**	**2,118,535**	**100.0%**	**1,256,413**	**100.0%**
0-17 years	3,729	2,276	0.1%	520	0.0%	449	0.0%	264	0.0%
18-24 years	32,120	18,109	0.4%	4,422	0.3%	4,395	0.2%	2,787	0.2%
25-34 years	212,287	114,062	2.5%	28,801	2.2%	32,023	1.5%	19,374	1.5%
35-44 years	839,316	429,655	9.6%	112,398	8.5%	135,493	6.4%	81,455	6.5%
45-64 years	4,454,092	2,037,276	45.4%	581,324	44.2%	791,234	37.3%	493,726	39.3%
65+ years	5,045,999	1,889,792	42.1%	587,239	44.7%	1,154,941	54.5%	658,807	52.4%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 3e. Categorical Summary of All Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Age Group

Exposure group	Total Number of Episodes	181-365 Days		366-730 Days		>730 Days	
		Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes
DPP-4 inhibitors	**16,367,956**	**1,057,193**	**100.0%**	**511,701**	**100.0%**	**287,910**	**100.0%**
0-17 years	4,383	148	0.0%	61	0.0%	15	0.0%
18-24 years	35,272	1,339	0.1%	622	0.1%	287	0.1%
25-34 years	267,878	11,076	1.0%	5,001	1.0%	2,651	0.9%
35-44 years	1,057,119	46,820	4.4%	21,049	4.1%	10,949	3.8%
45-64 years	5,899,263	335,448	31.7%	162,021	31.7%	85,727	29.8%
65+ years	9,104,041	662,362	62.7%	322,947	63.1%	188,281	65.4%
DPP-4/SGLT-2 inhibitors	**198,494**	**12,727**	**100.0%**	**6,129**	**100.0%**	**2,674**	**100.0%**
0-17 years	51	*****	*****	*****	*****	*****	*****
18-24 years	673	*****	*****	*****	*****	*****	*****
25-34 years	3,541	*****	*****	69	1.1%	21	0.8%
35-44 years	16,362	770	6.1%	365	6.0%	145	5.4%
45-64 years	90,035	5,348	42.0%	2,599	42.4%	1,226	45.8%
65+ years	87,832	6,427	50.5%	3,090	50.4%	1,278	47.8%
GIP/GLP-1 agonists	**754,950**	**62,304**	**100.0%**	**14,430**	**100.0%**	**0**	**NaN**
0-17 years	232	*****	*****	*****	*****	0	NaN
18-24 years	5,778	*****	*****	*****	*****	0	NaN
25-34 years	29,204	1,903	3.1%	445	3.1%	0	NaN
35-44 years	91,895	7,499	12.0%	2,090	14.5%	0	NaN
45-64 years	362,760	32,362	51.9%	8,379	58.1%	0	NaN
65+ years	265,081	20,222	32.5%	3,452	23.9%	0	NaN
GLP-1 agonists	**15,321,312**	**867,216**	**100.0%**	**396,646**	**100.0%**	**188,914**	**100.0%**
0-17 years	33,171	1,145	0.1%	397	0.1%	74	0.0%
18-24 years	102,096	4,165	0.5%	1,404	0.4%	373	0.2%
25-34 years	523,504	23,570	2.7%	8,579	2.2%	2,792	1.5%
35-44 years	1,682,259	83,449	9.6%	35,007	8.8%	13,566	7.2%
45-64 years	6,873,086	390,057	45.0%	182,943	46.1%	83,652	44.3%
65+ years	6,107,196	364,830	42.1%	168,316	42.4%	88,457	46.8%
SGLT-2 inhibitors	**10,587,543**	**800,365**	**100.0%**	**408,430**	**100.0%**	**197,926**	**100.0%**
0-17 years	3,729	147	0.0%	59	0.0%	14	0.0%

Table 3e. Categorical Summary of All Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Age Group

		181-365 Days		366-730 Days		>730 Days	
Exposure group	Total Number of Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes
18-24 years	32,120	1,476	0.2%	699	0.2%	232	0.1%
25-34 years	212,287	10,863	1.4%	4,976	1.2%	2,188	1.1%
35-44 years	839,316	46,836	5.9%	22,482	5.5%	10,997	5.6%
45-64 years	4,454,092	309,019	38.6%	160,937	39.4%	80,576	40.7%
65+ years	5,045,999	432,024	54.0%	219,277	53.7%	103,919	52.5%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 3f. Continuous Summary of All Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Age Group

Exposure group	Total Number of Episodes	Distribution of Treatment Episode Durations, days						
		Minimum	Q1	Median	Q3	Maximum	Mean	Standard Deviation
DPP-4 inhibitors	**16,367,956**	**1**	**30**	**60**	**90**	**5,884**	**109.2**	**201.0**
0-17 years	4,383	1	30	30	60	1,555	63.6	92.5
18-24 years	35,272	1	30	30	90	3,598	76.5	137.0
25-34 years	267,878	1	30	30	90	4,705	81.2	156.5
35-44 years	1,057,119	1	30	30	90	5,665	84.1	161.0
45-64 years	5,899,263	1	30	30	90	5,884	98.7	182.4
65+ years	9,104,041	1	30	60	90	5,768	119.8	216.8
DPP-4/SGLT-2 inhibitors	**198,494**	**1**	**30**	**60**	**90**	**2,987**	**103.0**	**161.9**
0-17 years	51	21	30	30	30	1,170	70.4	171.7
18-24 years	673	4	30	30	90	1,064	71.0	96.1
25-34 years	3,541	1	30	30	90	1,670	77.2	113.8
35-44 years	16,362	1	30	30	90	2,405	83.3	132.6
45-64 years	90,035	1	30	44	90	2,952	98.4	160.3
65+ years	87,832	1	30	60	90	2,987	112.6	169.7
GIP/GLP-1 agonists	**754,950**	**1**	**28**	**30**	**84**	**718**	**74.8**	**84.8**
0-17 years	232	1	28	28	84	472	73.5	86.8
18-24 years	5,778	1	28	28	58	550	60.3	69.7
25-34 years	29,204	1	28	28	78	672	66.4	77.3
35-44 years	91,895	1	28	30	84	664	74.6	87.4
45-64 years	362,760	1	28	32	84	717	78.0	89.2
65+ years	265,081	1	28	30	84	718	71.7	78.4
GLP-1 agonists	**15,321,312**	**1**	**28**	**30**	**84**	**5,093**	**89.7**	**159.8**
0-17 years	33,171	1	28	30	60	2,412	60.0	84.5
18-24 years	102,096	1	28	30	60	4,348	65.4	99.4
25-34 years	523,504	1	28	30	61	4,255	70.3	114.2
35-44 years	1,682,259	1	28	30	84	4,974	77.9	134.5
45-64 years	6,873,086	1	28	30	84	5,093	88.8	158.4
65+ years	6,107,196	1	28	42	90	5,067	96.1	171.5

Table 3f. Continuous Summary of All Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Age Group

Exposure group	Total Number of Episodes	Distribution of Treatment Episode Durations, days						
		Minimum	Q1	Median	Q3	Maximum	Mean	Standard Deviation
SGLT-2 inhibitors	**10,587,543**	**1**	**30**	**60**	**95**	**3,965**	**116.5**	**190.4**
0-17 years	3,729	1	30	30	61	1,350	68.7	99.5
18-24 years	32,120	1	30	30	90	3,015	79.8	129.1
25-34 years	212,287	1	30	30	90	3,428	87.6	150.8
35-44 years	839,316	1	30	30	90	3,860	95.0	164.6
45-64 years	4,454,092	1	30	60	90	3,965	111.1	187.9
65+ years	5,045,999	1	30	73	120	3,862	126.4	197.7

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; Q = quartile; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 3g. Categorical Summary of All Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by T1DM (>50% Code Days)

		Number of Treatment Episodes by Duration					
		1-30 Days		31-60 Days		61-90 Days	
Exposure group	Total Number of Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes
DPP-4 inhibitors	**16,367,956**	**7,657,415**	**100.0%**	**2,034,452**	**100.0%**	**3,063,150**	**100.0%**
With T1DM	105,752	54,022	0.7%	13,597	0.7%	17,342	0.6%
Without T1DM	16,262,204	7,603,393	99.3%	2,020,855	99.3%	3,045,808	99.4%
DPP-4/SGLT-2 inhibitors	**198,494**	**90,953**	**100.0%**	**24,683**	**100.0%**	**40,029**	**100.0%**
With T1DM	863	465	0.5%	109	0.4%	133	0.3%
Without T1DM	197,631	90,488	99.5%	24,574	99.6%	39,896	99.7%
GIP/GLP-1 agonists	**754,950**	**380,997**	**100.0%**	**129,821**	**100.0%**	**78,364**	**100.0%**
With T1DM	5,241	2,549	0.7%	826	0.6%	557	0.7%
Without T1DM	749,709	378,448	99.3%	128,995	99.4%	77,807	99.3%
GLP-1 agonists	**15,321,312**	**7,999,769**	**100.0%**	**2,336,299**	**100.0%**	**2,070,553**	**100.0%**
With T1DM	141,552	75,203	0.9%	20,746	0.9%	19,871	1.0%
Without T1DM	15,179,760	7,924,566	99.1%	2,315,553	99.1%	2,050,682	99.0%
SGLT-2 inhibitors	**10,587,543**	**4,491,170**	**100.0%**	**1,314,704**	**100.0%**	**2,118,535**	**100.0%**
With T1DM	78,084	35,737	0.8%	9,967	0.8%	14,557	0.7%
Without T1DM	10,509,459	4,455,433	99.2%	1,304,737	99.2%	2,103,978	99.3%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors; T1DM = type 1 diabetes mellitus and T2DM = type 2 diabetes mellitus.

Table 3g. Categorical Summary of All Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by T1DM (>50% Code Days)

		91-180 Days		181-365 Days		366-730 Days		>730 Days	
Exposure group	Total Number of Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes
DPP-4 inhibitors	**16,367,956**	**1,756,135**	**100.0%**	**1,057,193**	**100.0%**	**511,701**	**100.0%**	**287,910**	**100.0%**
With T1DM	105,752	10,265	0.6%	6,107	0.6%	2,849	0.6%	1,570	0.5%
Without T1DM	16,262,204	1,745,870	99.4%	1,051,086	99.4%	508,852	99.4%	286,340	99.5%
DPP-4/SGLT-2 inhibitors	**198,494**	**21,299**	**100.0%**	**12,727**	**100.0%**	**6,129**	**100.0%**	**2,674**	**100.0%**
With T1DM	863	76	0.4%	49	0.4%	18	0.3%	13	0.5%
Without T1DM	197,631	21,223	99.6%	12,678	99.6%	6,111	99.7%	2,661	99.5%
GIP/GLP-1 agonists	**754,950**	**89,034**	**100.0%**	**62,304**	**100.0%**	**14,430**	**100.0%**	**0**	**NaN**
With T1DM	5,241	629	0.7%	519	0.8%	161	1.1%	0	NaN
Without T1DM	749,709	88,405	99.3%	61,785	99.2%	14,269	98.9%	0	NaN
GLP-1 agonists	**15,321,312**	**1,461,915**	**100.0%**	**867,216**	**100.0%**	**396,646**	**100.0%**	**188,914**	**100.0%**
With T1DM	141,552	12,794	0.9%	7,710	0.9%	3,572	0.9%	1,656	0.9%
Without T1DM	15,179,760	1,449,121	99.1%	859,506	99.1%	393,074	99.1%	187,258	99.1%
SGLT-2 inhibitors	**10,587,543**	**1,256,413**	**100.0%**	**800,365**	**100.0%**	**408,430**	**100.0%**	**197,926**	**100.0%**
With T1DM	78,084	8,359	0.7%	5,255	0.7%	2,761	0.7%	1,448	0.7%
Without T1DM	10,509,459	1,248,054	99.3%	795,110	99.3%	405,669	99.3%	196,478	99.3%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors; T1DM = type 1 diabetes mellitus and T2DM = type 2 diabetes mellitus.

Table 3h. Continuous Summary of All Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by T1DM (>50% Code Days)

		Distribution of Treatment Episode Durations, days						
Exposure group	Total Number of Episodes	Minimum	Q1	Median	Q3	Maximum	Mean	Standard Deviation
DPP-4 inhibitors	**16,367,956**	**1**	**30**	**60**	**90**	**5,884**	**109.2**	**201.0**
With T1DM	105,752	1	30	30	90	5,723	98.7	188.7
Without T1DM	16,262,204	1	30	60	90	5,884	109.2	201.1
DPP-4/SGLT-2 inhibitors	**198,494**	**1**	**30**	**60**	**90**	**2,987**	**103.0**	**161.9**
With T1DM	863	2	30	30	90	1,903	95.2	172.5
Without T1DM	197,631	1	30	60	90	2,987	103.0	161.8
GIP/GLP-1 agonists	**754,950**	**1**	**28**	**30**	**84**	**718**	**74.8**	**84.8**
With T1DM	5,241	1	28	37	90	652	84.3	97.4
Without T1DM	749,709	1	28	30	84	718	74.7	84.7
GLP-1 agonists	**15,321,312**	**1**	**28**	**30**	**84**	**5,093**	**89.7**	**159.8**
With T1DM	141,552	1	28	30	86	4,179	88.5	158.7
Without T1DM	15,179,760	1	28	30	84	5,093	89.7	159.9
SGLT-2 inhibitors	**10,587,543**	**1**	**30**	**60**	**95**	**3,965**	**116.5**	**190.4**
With T1DM	78,084	1	30	60	90	3,689	111.6	193.6
Without T1DM	10,509,459	1	30	60	95	3,965	116.5	190.4

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; Q = quartile; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors; T1DM = type 1 diabetes mellitus and T2DM = type 2 diabetes mellitus.

Table 3i. Categorical Summary of All Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by T2DM (and No T1DM Codes)

		Number of Treatment Episodes by Duration							
		1-30 Days		31-60 Days		61-90 Days		91-180 Days	
Exposure group	Total Number of Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes
DPP-4 inhibitors	**16,367,956**	**7,657,415**	**100.0%**	**2,034,452**	**100.0%**	**3,063,150**	**100.0%**	**1,756,135**	**100.0%**
With T2DM	14,251,820	6,608,411	86.3%	1,761,278	86.6%	2,706,142	88.3%	1,540,048	87.7%
Without T2DM	2,116,136	1,049,004	13.7%	273,174	13.4%	357,008	11.7%	216,087	12.3%
DPP-4/SGLT-2 inhibitors	**198,494**	**90,953**	**100.0%**	**24,683**	**100.0%**	**40,029**	**100.0%**	**21,299**	**100.0%**
With T2DM	182,258	83,008	91.3%	22,664	91.8%	37,048	92.6%	19,635	92.2%
Without T2DM	16,236	7,945	8.7%	2,019	8.2%	2,981	7.4%	1,664	7.8%
GIP/GLP-1 agonists	**754,950**	**380,997**	**100.0%**	**129,821**	**100.0%**	**78,364**	**100.0%**	**89,034**	**100.0%**
With T2DM	551,507	274,245	72.0%	93,204	71.8%	58,669	74.9%	67,545	75.9%
Without T2DM	203,443	106,752	28.0%	36,617	28.2%	19,695	25.1%	21,489	24.1%
GLP-1 agonists	**15,321,312**	**7,999,769**	**100.0%**	**2,336,299**	**100.0%**	**2,070,553**	**100.0%**	**1,461,915**	**100.0%**
With T2DM	12,242,797	6,326,628	79.1%	1,855,968	79.4%	1,696,045	81.9%	1,175,568	80.4%
Without T2DM	3,078,515	1,673,141	20.9%	480,331	20.6%	374,508	18.1%	286,347	19.6%
SGLT-2 inhibitors	**10,587,543**	**4,491,170**	**100.0%**	**1,314,704**	**100.0%**	**2,118,535**	**100.0%**	**1,256,413**	**100.0%**
With T2DM	9,134,872	3,865,825	86.1%	1,128,378	85.8%	1,837,277	86.7%	1,082,497	86.2%
Without T2DM	1,452,671	625,345	13.9%	186,326	14.2%	281,258	13.3%	173,916	13.8%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors; T1DM = type 1 diabetes mellitus and T2DM = type 2 diabetes mellitus.

Table 3i. Categorical Summary of All Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by T2DM (and No T1DM Codes)

		181-365 Days		366-730 Days		>730 Days	
Exposure group	Total Number of Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes
DPP-4 inhibitors	**16,367,956**	**1,057,193**	**100.0%**	**511,701**	**100.0%**	**287,910**	**100.0%**
With T2DM	14,251,820	930,514	88.0%	450,892	88.1%	254,535	88.4%
Without T2DM	2,116,136	126,679	12.0%	60,809	11.9%	33,375	11.6%
DPP-4/SGLT-2 inhibitors	**198,494**	**12,727**	**100.0%**	**6,129**	**100.0%**	**2,674**	**100.0%**
With T2DM	182,258	11,756	92.4%	5,685	92.8%	2,462	92.1%
Without T2DM	16,236	971	7.6%	444	7.2%	212	7.9%
GIP/GLP-1 agonists	**754,950**	**62,304**	**100.0%**	**14,430**	**100.0%**	**0**	**NaN**
With T2DM	551,507	47,204	75.8%	10,640	73.7%	0	NaN
Without T2DM	203,443	15,100	24.2%	3,790	26.3%	0	NaN
GLP-1 agonists	**15,321,312**	**867,216**	**100.0%**	**396,646**	**100.0%**	**188,914**	**100.0%**
With T2DM	12,242,797	696,825	80.4%	328,514	82.8%	163,249	86.4%
Without T2DM	3,078,515	170,391	19.6%	68,132	17.2%	25,665	13.6%
SGLT-2 inhibitors	**10,587,543**	**800,365**	**100.0%**	**408,430**	**100.0%**	**197,926**	**100.0%**
With T2DM	9,134,872	688,816	86.1%	355,263	87.0%	176,816	89.3%
Without T2DM	1,452,671	111,549	13.9%	53,167	13.0%	21,110	10.7%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors; T1DM = type 1 diabetes mellitus and T2DM = type 2 diabetes mellitus.

Table 3j. Continuous Summary of All Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by T2DM (and No T1DM Codes)

		Distribution of Treatment Episode Durations, days						
Exposure group	Total Number of Episodes	Minimum	Q1	Median	Q3	Maximum	Mean	Standard Deviation
DPP-4 inhibitors	**16,367,956**	**1**	**30**	**60**	**90**	**5,884**	**109.2**	**201.0**
With T2DM	14,251,820	1	30	60	90	5,884	110.2	202.2
Without T2DM	2,116,136	1	30	37	90	5,723	102.1	192.7
DPP-4/SGLT-2 inhibitors	**198,494**	**1**	**30**	**60**	**90**	**2,987**	**103.0**	**161.9**
With T2DM	182,258	1	30	60	90	2,987	103.4	161.9
Without T2DM	16,236	1	30	49	90	2,867	98.4	162.1
GIP/GLP-1 agonists	**754,950**	**1**	**28**	**30**	**84**	**718**	**74.8**	**84.8**
With T2DM	551,507	1	28	31	84	718	76.2	85.3
Without T2DM	203,443	1	28	29	84	693	71.1	83.2
GLP-1 agonists	**15,321,312**	**1**	**28**	**30**	**84**	**5,093**	**89.7**	**159.8**
With T2DM	12,242,797	1	28	30	85	5,093	91.7	164.5
Without T2DM	3,078,515	1	28	30	84	4,605	81.7	139.7
SGLT-2 inhibitors	**10,587,543**	**1**	**30**	**60**	**95**	**3,965**	**116.5**	**190.4**
With T2DM	9,134,872	1	30	60	96	3,965	117.6	192.9
Without T2DM	1,452,671	1	30	60	90	3,861	109.9	174.2

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; Q = quartile; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors; T1DM = type 1 diabetes mellitus and T2DM = type 2 diabetes mellitus.

Table 3k. Categorical Summary of All Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Obesity

		Number of Treatment Episodes by Duration					
		1-30 Days		31-60 Days		61-90 Days	
Exposure group	Total Number of Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes
DPP-4 inhibitors	**16,367,956**	**7,657,415**	**100.0%**	**2,034,452**	**100.0%**	**3,063,150**	**100.0%**
With Obesity	4,242,065	1,933,039	25.2%	521,621	25.6%	822,864	26.9%
Without Obesity	12,125,891	5,724,376	74.8%	1,512,831	74.4%	2,240,286	73.1%
DPP-4/SGLT-2 inhibitors	**198,494**	**90,953**	**100.0%**	**24,683**	**100.0%**	**40,029**	**100.0%**
With Obesity	74,778	33,657	37.0%	9,190	37.2%	15,586	38.9%
Without Obesity	123,716	57,296	63.0%	15,493	62.8%	24,443	61.1%
GIP/GLP-1 agonists	**754,950**	**380,997**	**100.0%**	**129,821**	**100.0%**	**78,364**	**100.0%**
With Obesity	514,791	259,108	68.0%	88,921	68.5%	53,379	68.1%
Without Obesity	240,159	121,889	32.0%	40,900	31.5%	24,985	31.9%
GLP-1 agonists	**15,321,312**	**7,999,769**	**100.0%**	**2,336,299**	**100.0%**	**2,070,553**	**100.0%**
With Obesity	7,702,982	3,947,597	49.3%	1,191,570	51.0%	1,048,218	50.6%
Without Obesity	7,618,330	4,052,172	50.7%	1,144,729	49.0%	1,022,335	49.4%
SGLT-2 inhibitors	**10,587,543**	**4,491,170**	**100.0%**	**1,314,704**	**100.0%**	**2,118,535**	**100.0%**
With Obesity	4,238,627	1,764,425	39.3%	522,097	39.7%	868,570	41.0%
Without Obesity	6,348,916	2,726,745	60.7%	792,607	60.3%	1,249,965	59.0%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 3k. Categorical Summary of All Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Obesity

		91-180 Days		181-365 Days		366-730 Days		>730 Days	
Exposure group	Total Number of Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes	Number of Episodes	Percent of Total Episodes
DPP-4 inhibitors	**16,367,956**	**1,756,135**	**100.0%**	**1,057,193**	**100.0%**	**511,701**	**100.0%**	**287,910**	**100.0%**
With Obesity	4,242,065	469,206	26.7%	283,165	26.8%	137,808	26.9%	74,362	25.8%
Without Obesity	12,125,891	1,286,929	73.3%	774,028	73.2%	373,893	73.1%	213,548	74.2%
DPP-4/SGLT-2 inhibitors	**198,494**	**21,299**	**100.0%**	**12,727**	**100.0%**	**6,129**	**100.0%**	**2,674**	**100.0%**
With Obesity	74,778	8,082	37.9%	4,905	38.5%	2,374	38.7%	984	36.8%
Without Obesity	123,716	13,217	62.1%	7,822	61.5%	3,755	61.3%	1,690	63.2%
GIP/GLP-1 agonists	**754,950**	**89,034**	**100.0%**	**62,304**	**100.0%**	**14,430**	**100.0%**	**0**	**NaN**
With Obesity	514,791	60,889	68.4%	42,561	68.3%	9,933	68.8%	0	NaN
Without Obesity	240,159	28,145	31.6%	19,743	31.7%	4,497	31.2%	0	NaN
GLP-1 agonists	**15,321,312**	**1,461,915**	**100.0%**	**867,216**	**100.0%**	**396,646**	**100.0%**	**188,914**	**100.0%**
With Obesity	7,702,982	758,854	51.9%	456,942	52.7%	206,237	52.0%	93,564	49.5%
Without Obesity	7,618,330	703,061	48.1%	410,274	47.3%	190,409	48.0%	95,350	50.5%
SGLT-2	**10,587,543**	**1,256,413**	**100.0%**	**800,365**	**100.0%**	**408,430**	**100.0%**	**197,926**	**100.0%**
With Obesity	4,238,627	510,498	40.6%	326,172	40.8%	167,286	41.0%	79,579	40.2%
Without Obesity	6,348,916	745,915	59.4%	474,193	59.2%	241,144	59.0%	118,347	59.8%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 3l. Continuous Summary of All Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Obesity

		Distribution of Treatment Episode Durations, days						
Exposure group	Total Number of Episodes	Minimum	Q1	Median	Q3	Maximum	Mean	Standard Deviation
DPP-4 inhibitors	**16,367,956**	**1**	**30**	**60**	**90**	**5,884**	**109.2**	**201.0**
With Obesity	4,242,065	1	30	60	90	5,658	110.3	195.4
Without Obesity	12,125,891	1	30	60	90	5,884	108.8	203.0
DPP-4/SGLT-2 inhibitors	**198,494**	**1**	**30**	**60**	**90**	**2,987**	**103.0**	**161.9**
With Obesity	74,778	1	30	60	90	2,867	103.6	159.1
Without Obesity	123,716	1	30	60	90	2,987	102.6	163.5
GIP/GLP-1 agonists	**754,950**	**1**	**28**	**30**	**84**	**718**	**74.8**	**84.8**
With Obesity	514,791	1	28	30	84	717	74.9	85.0
Without Obesity	240,159	1	28	30	84	718	74.6	84.3
GLP-1 agonists	**15,321,312**	**1**	**28**	**30**	**84**	**5,093**	**89.7**	**159.8**
With Obesity	7,702,982	1	28	30	84	5,093	90.6	158.0
Without Obesity	7,618,330	1	28	30	84	5,067	88.8	161.7
SGLT-2 inhibitors	**10,587,543**	**1**	**30**	**60**	**95**	**3,965**	**116.5**	**190.4**
With Obesity	4,238,627	1	30	60	103	3,965	117.6	189.3
Without Obesity	6,348,916	1	30	60	90	3,881	115.8	191.2

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; Q = quartile; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 4a. Categorical Summary of First Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

		Number of Patients by First Treatment Episode Duration					
		1-30 Days		31-60 Days		61-90 Days	
Exposure group	Total Number of Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
DPP-4 inhibitors	2,921,067	1,257,560	43.1%	321,694	11.0%	524,832	18.0%
DPP-4/SGLT-2 inhibitors	47,692	20,401	42.8%	4,869	10.2%	10,055	21.1%
GIP/GLP-1 agonists	374,607	174,619	46.6%	63,012	16.8%	40,492	10.8%
GLP-1 agonists	3,321,029	1,530,886	46.1%	520,887	15.7%	445,720	13.4%
SGLT-2 inhibitors	2,842,393	1,071,336	37.7%	314,450	11.1%	568,752	20.0%
Canagliflozin	501,332	237,007	47.3%	56,153	11.2%	80,300	16.0%
Saxenda	84,064	50,053	59.5%	13,550	16.1%	8,240	9.8%
Ozempic	1,364,127	552,458	40.5%	267,340	19.6%	198,624	14.6%
Wegovy	163,331	85,135	52.1%	26,367	16.1%	13,819	8.5%
Rybelsus	277,037	141,799	51.2%	33,944	12.3%	40,744	14.7%
Mounjaro	349,937	159,299	45.5%	56,428	16.1%	38,006	10.9%
Zepbound	27,069	17,003	62.8%	7,130	26.3%	2,678	9.9%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-

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

Table 4a. Categorical Summary of First Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

Exposure group	Total Number of Patients	91-180 Days		181-365 Days		366-730 Days		>730 Days	
		Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
DPP-4 inhibitors	2,921,067	345,819	11.8%	237,448	8.1%	137,116	4.7%	96,598	3.3%
DPP-4/SGLT-2 inhibitors	47,692	5,367	11.3%	3,677	7.7%	2,189	4.6%	1,134	2.4%
GIP/GLP-1 agonists	374,607	47,126	12.6%	38,190	10.2%	11,168	3.0%	0	0.0%
GLP-1 agonists	3,321,029	366,575	11.0%	254,655	7.7%	131,024	3.9%	71,282	2.1%
SGLT-2 inhibitors	2,842,393	372,213	13.1%	270,947	9.5%	157,715	5.5%	86,980	3.1%
Canagliflozin	501,332	53,904	10.8%	36,866	7.4%	21,858	4.4%	15,244	3.0%
Saxenda	84,064	7,602	9.0%	3,120	3.7%	1,219	1.5%	280	0.3%
Ozempic	1,364,127	160,090	11.7%	114,847	8.4%	50,906	3.7%	19,862	1.5%
Wegovy	163,331	18,204	11.1%	15,822	9.7%	3,559	2.2%	425	0.3%
Rybelsus	277,037	28,615	10.3%	17,829	6.4%	10,169	3.7%	3,937	1.4%
Mounjaro	349,937	46,860	13.4%	38,183	10.9%	11,161	3.2%	0	0.0%
Zepbound	27,069	*****	*****	*****	*****	0	0.0%	0	0.0%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; SGLT-2 inhibitors=sodium-

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

Table 4b. Continuous Summary of First Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

Exposure group	Total Number of Patients	Distribution of First Treatment Episode Duration, days						
		Minimum	Q1	Median	Q3	Maximum	Mean	Standard Deviation
DPP-4 inhibitors	2,921,067	1	30	60	120	5,884	142.5	273.2
inhibitors	47,692	1	30	60	120	2,987	125.5	202.0
GIP/GLP-1 agonists	374,607	1	28	45	100	718	85.0	96.2
GLP-1 agonists	3,321,029	1	28	50	90	4,992	113.1	203.1
SGLT-2 inhibitors	2,842,393	1	30	78	150	3,965	144.5	234.8
Canagliflozin	501,332	1	30	60	114	3,881	131.5	246.9
Saxenda	84,064	1	30	30	60	2,190	66.7	93.6
Ozempic	1,364,127	1	28	56	98	2,299	104.9	162.1
Wegovy	163,331	1	28	30	84	1,030	81.5	100.1
Rybelsus	277,037	1	30	30	90	1,569	99.0	150.2
Mounjaro	349,937	1	28	52	112	718	88.6	98.3
Zepbound	27,069	1	22	28	46	185	33.9	21.7

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; Q = quartile; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 4c. Categorical Summary of First Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Sex

		Number of Patients by First Treatment Episode Duration							
		1-30 Days		31-60 Days		61-90 Days		91-180 Days	
Exposure group	Total Number of Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
DPP-4 inhibitors	**2,921,067**	**1,257,560**	**100.0%**	**321,694**	**100.0%**	**524,832**	**100.0%**	**345,819**	**100.0%**
Female	1,539,902	672,007	53.4%	172,411	53.6%	270,166	51.5%	181,116	52.4%
Male	1,381,165	585,553	46.6%	149,283	46.4%	254,666	48.5%	164,703	47.6%
DPP-4/SGLT-2 inhibitors	**47,692**	**20,401**	**100.0%**	**4,869**	**100.0%**	**10,055**	**100.0%**	**5,367**	**100.0%**
Female	21,858	9,755	47.8%	2,282	46.9%	4,443	44.2%	2,419	45.1%
Male	25,834	10,646	52.2%	2,587	53.1%	5,612	55.8%	2,948	54.9%
GIP/GLP-1 agonists	**374,607**	**174,619**	**100.0%**	**63,012**	**100.0%**	**40,492**	**100.0%**	**47,126**	**100.0%**
Female	232,247	107,854	61.8%	39,433	62.6%	24,664	60.9%	29,179	61.9%
Male	142,360	66,765	38.2%	23,579	37.4%	15,828	39.1%	17,947	38.1%
GLP-1 agonists	**3,321,029**	**1,530,886**	**100.0%**	**520,887**	**100.0%**	**445,720**	**100.0%**	**366,575**	**100.0%**
Female	1,939,253	904,467	59.1%	311,291	59.8%	250,548	56.2%	214,834	58.6%
Male	1,381,776	626,419	40.9%	209,596	40.2%	195,172	43.8%	151,741	41.4%
SGLT-2 inhibitors	**2,842,393**	**1,071,336**	**100.0%**	**314,450**	**100.0%**	**568,752**	**100.0%**	**372,213**	**100.0%**
Female	1,322,334	521,662	48.7%	151,231	48.1%	259,763	45.7%	169,930	45.7%
Male	1,520,059	549,674	51.3%	163,219	51.9%	308,989	54.3%	202,283	54.3%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 4c. Categorical Summary of First Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Sex

Exposure group	Total Number of Patients	181-365 Days		366-730 Days		>730 Days	
		Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total
DPP-4 inhibitors	**2,921,067**	**237,448**	**100.0%**	**137,116**	**100.0%**	**96,598**	**100.0%**
Female	1,539,902	123,115	51.8%	71,504	52.1%	49,583	51.3%
Male	1,381,165	114,333	48.2%	65,612	47.9%	47,015	48.7%
DPP-4/SGLT-2 inhibitors	**47,692**	**3,677**	**100.0%**	**2,189**	**100.0%**	**1,134**	**100.0%**
Female	21,858	1,573	42.8%	926	42.3%	460	40.6%
Male	25,834	2,104	57.2%	1,263	57.7%	674	59.4%
GIP/GLP-1 agonists	**374,607**	**38,190**	**100.0%**	**11,168**	**100.0%**	**0**	**NaN**
Female	232,247	23,923	62.6%	7,194	64.4%	0	NaN
Male	142,360	14,267	37.4%	3,974	35.6%	0	NaN
GLP-1 agonists	**3,321,029**	**254,655**	**100.0%**	**131,024**	**100.0%**	**71,282**	**100.0%**
Female	1,939,253	148,428	58.3%	73,310	56.0%	36,375	51.0%
Male	1,381,776	106,227	41.7%	57,714	44.0%	34,907	49.0%
SGLT-2 inhibitors	**2,842,393**	**270,947**	**100.0%**	**157,715**	**100.0%**	**86,980**	**100.0%**
Female	1,322,334	118,683	43.8%	66,624	42.2%	34,441	39.6%
Male	1,520,059	152,264	56.2%	91,091	57.8%	52,539	60.4%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 4d. Continuous Summary of First Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Sex

Exposure group	Total Number of Patients	Distribution of First Treatment Episode Duration, days						
		Minimum	Q1	Median	Q3	Maximum	Mean	Standard Deviation
DPP-4 inhibitors	**2,921,067**	**1**	**30**	**60**	**120**	**5,884**	**142.5**	**273.2**
Female	1,539,902	1	30	60	120	5,884	140.1	269.1
Male	1,381,165	1	30	60	120	5,768	145.2	277.6
DPP-4/SGLT-2 inhibitors	**47,692**	**1**	**30**	**60**	**120**	**2,987**	**125.5**	**202.0**
Female	21,858	1	30	60	90	2,987	118.8	193.7
Male	25,834	1	30	60	120	2,952	131.3	208.6
GIP/GLP-1 agonists	**374,607**	**1**	**28**	**45**	**100**	**718**	**85.0**	**96.2**
Female	232,247	1	28	45	103	718	85.7	97.1
Male	142,360	1	28	44	94	694	83.9	94.5
GLP-1 agonists	**3,321,029**	**1**	**28**	**50**	**90**	**4,992**	**113.1**	**203.1**
Female	1,939,253	1	28	45	90	4,992	108.5	191.3
Male	1,381,776	1	28	56	98	4,977	119.5	218.5
SGLT-2 inhibitors	**2,842,393**	**1**	**30**	**78**	**150**	**3,965**	**144.5**	**234.8**
Female	1,322,334	1	30	60	120	3,965	134.5	218.8
Male	1,520,059	1	30	90	165	3,881	153.2	247.5

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; Q = quartile; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 4e. Categorical Summary of First Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Age Group

Exposure group	Total Number of Patients	Number of Patients by First Treatment Episode Duration							
		1-30 Days		31-60 Days		61-90 Days		91-180 Days	
		Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
DPP-4 inhibitors	**2,921,067**	**1,257,560**	**100.0%**	**321,694**	**100.0%**	**524,832**	**100.0%**	**345,819**	**100.0%**
0-17 years	1,147	703	0.1%	166	0.1%	100	0.0%	83	0.0%
18-24 years	8,862	5,000	0.4%	1,155	0.4%	1,137	0.2%	798	0.2%
25-34 years	54,450	29,688	2.4%	7,013	2.2%	7,111	1.4%	5,184	1.5%
35-44 years	184,800	98,246	7.8%	23,514	7.3%	25,149	4.8%	17,866	5.2%
45-64 years	1,036,762	487,412	38.8%	124,496	38.7%	161,146	30.7%	114,979	33.2%
65+ years	1,635,046	636,511	50.6%	165,350	51.4%	330,189	62.9%	206,909	59.8%
DPP-4/SGLT-2 inhibitors	**47,692**	**20,401**	**100.0%**	**4,869**	**100.0%**	**10,055**	**100.0%**	**5,367**	**100.0%**
0-17 years	*****	*****	*****	*****	*****	*****	*****	0	0.0%
18-24 years	*****	*****	*****	*****	*****	*****	*****	18	0.3%
25-34 years	912	472	2.3%	119	2.4%	145	1.4%	82	1.5%
35-44 years	3,612	1,894	9.3%	406	8.3%	531	5.3%	347	6.5%
45-64 years	20,371	9,469	46.4%	2,287	47.0%	3,472	34.5%	2,135	39.8%
65+ years	22,623	8,461	41.5%	2,045	42.0%	5,886	58.5%	2,785	51.9%
GIP/GLP-1 agonists	**374,607**	**174,619**	**100.0%**	**63,012**	**100.0%**	**40,492**	**100.0%**	**47,126**	**100.0%**
0-17 years	117	57	0.0%	24	0.0%	*****	*****	16	0.0%
18-24 years	2,919	1,505	0.9%	561	0.9%	*****	*****	296	0.6%
25-34 years	14,899	7,189	4.1%	2,909	4.6%	1,486	3.7%	1,673	3.6%
35-44 years	45,355	20,720	11.9%	8,059	12.8%	4,511	11.1%	5,499	11.7%
45-64 years	178,931	80,865	46.3%	29,719	47.2%	18,929	46.7%	23,091	49.0%
65+ years	132,386	64,283	36.8%	21,740	34.5%	15,268	37.7%	16,551	35.1%
GLP-1 agonists	**3,321,029**	**1,530,886**	**100.0%**	**520,887**	**100.0%**	**445,720**	**100.0%**	**366,575**	**100.0%**
0-17 years	10,040	5,651	0.4%	1,839	0.4%	922	0.2%	894	0.2%
18-24 years	30,428	16,904	1.1%	5,217	1.0%	3,019	0.7%	2,748	0.7%
25-34 years	135,542	71,497	4.7%	23,448	4.5%	13,752	3.1%	13,630	3.7%
35-44 years	364,861	184,189	12.0%	59,954	11.5%	38,516	8.6%	38,157	10.4%
45-64 years	1,433,415	682,699	44.6%	222,534	42.7%	169,664	38.1%	152,434	41.6%
65+ years	1,346,743	569,946	37.2%	207,895	39.9%	219,847	49.3%	158,712	43.3%
SGLT-2 inhibitors	**2,842,393**	**1,071,336**	**100.0%**	**314,450**	**100.0%**	**568,752**	**100.0%**	**372,213**	**100.0%**

Table 4e. Categorical Summary of First Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Age Group

		Number of Patients by First Treatment Episode Duration							
		1-30 Days		31-60 Days		61-90 Days		91-180 Days	
Exposure group	Total Number of Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
0-17 years	1,037	596	0.1%	120	0.0%	139	0.0%	89	0.0%
18-24 years	9,331	4,876	0.5%	1,273	0.4%	1,314	0.2%	938	0.3%
25-34 years	53,561	26,232	2.4%	7,273	2.3%	7,966	1.4%	5,709	1.5%
35-44 years	185,470	86,550	8.1%	23,989	7.6%	29,183	5.1%	20,415	5.5%
45-64 years	1,053,786	434,159	40.5%	126,482	40.2%	181,431	31.9%	128,674	34.6%
65+ years	1,539,208	518,923	48.4%	155,313	49.4%	348,719	61.3%	216,388	58.1%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

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

Table 4e. Categorical Summary of First Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Age Group

Exposure group	Total Number of Patients	181-365 Days		366-730 Days		>730 Days	
		Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
DPP-4 inhibitors	**2,921,067**	**237,448**	**100.0%**	**137,116**	**100.0%**	**96,598**	**100.0%**
0-17 years	1,147	60	0.0%	*****	*****	*****	*****
18-24 years	8,862	400	0.2%	*****	*****	*****	*****
25-34 years	54,450	2,958	1.2%	1,504	1.1%	992	1.0%
35-44 years	184,800	10,755	4.5%	5,605	4.1%	3,665	3.8%
45-64 years	1,036,762	76,264	32.1%	43,671	31.8%	28,794	29.8%
65+ years	1,635,046	147,011	61.9%	86,062	62.8%	63,014	65.2%
DPP-4/SGLT-2 inhibitors	**47,692**	**3,677**	**100.0%**	**2,189**	**100.0%**	**1,134**	**100.0%**
0-17 years	*****	*****	*****	0	0.0%	*****	*****
18-24 years	*****	*****	*****	*****	*****	*****	*****
25-34 years	912	51	1.4%	*****	*****	*****	*****
35-44 years	3,612	237	6.4%	135	6.2%	62	5.5%
45-64 years	20,371	1,521	41.4%	942	43.0%	545	48.1%
65+ years	22,623	1,856	50.5%	1,078	49.2%	512	45.1%
GIP/GLP-1 agonists	**374,607**	**38,190**	**100.0%**	**11,168**	**100.0%**	**0**	**NaN**
0-17 years	117	*****	*****	*****	*****	0	NaN
18-24 years	2,919	*****	*****	*****	*****	0	NaN
25-34 years	14,899	1,289	3.4%	353	3.2%	0	NaN
35-44 years	45,355	4,879	12.8%	1,687	15.1%	0	NaN
45-64 years	178,931	19,767	51.8%	6,560	58.7%	0	NaN
65+ years	132,386	12,028	31.5%	2,516	22.5%	0	NaN
GLP-1 agonists	**3,321,029**	**254,655**	**100.0%**	**131,024**	**100.0%**	**71,282**	**100.0%**
0-17 years	10,040	518	0.2%	179	0.1%	37	0.1%
18-24 years	30,428	1,748	0.7%	637	0.5%	155	0.2%
25-34 years	135,542	8,907	3.5%	3,276	2.5%	1,032	1.4%
35-44 years	364,861	26,852	10.5%	12,276	9.4%	4,917	6.9%
45-64 years	1,433,415	113,788	44.7%	61,104	46.6%	31,192	43.8%
65+ years	1,346,743	102,842	40.4%	53,552	40.9%	33,949	47.6%
SGLT-2 inhibitors	**2,842,393**	**270,947**	**100.0%**	**157,715**	**100.0%**	**86,980**	**100.0%**

Table 4e. Categorical Summary of First Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Age Group

Exposure group	Total Number of Patients	181-365 Days		366-730 Days		>730 Days	
		Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
0-17 years	1,037	62	0.0%	*****	*****	*****	*****
18-24 years	9,331	528	0.2%	*****	*****	*****	*****
25-34 years	53,561	3,668	1.4%	1,791	1.1%	922	1.1%
35-44 years	185,470	13,592	5.0%	7,466	4.7%	4,275	4.9%
45-64 years	1,053,786	93,805	34.6%	56,448	35.8%	32,787	37.7%
65+ years	1,539,208	159,292	58.8%	91,689	58.1%	48,884	56.2%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

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

Table 4f. Continuous Summary of First Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Age Group

Exposure group	Total Number of Patients	Distribution of First Treatment Episode Duration, days						
		Minimum	Q1	Median	Q3	Maximum	Mean	Standard Deviation
DPP-4 inhibitors	**2,921,067**	**1**	**30**	**60**	**120**	**5,884**	**142.5**	**273.2**
0-17 years	1,147	1	30	30	60	1,555	76.9	126.0
18-24 years	8,862	1	30	30	90	3,598	91.8	174.3
25-34 years	54,450	1	30	30	90	4,573	100.8	207.0
35-44 years	184,800	1	30	30	90	4,710	106.9	224.6
45-64 years	1,036,762	1	30	60	104	5,884	128.1	247.3
65+ years	1,635,046	1	30	83	150	5,768	157.3	294.4
DPP-4/SGLT-2 inhibitors	**47,692**	**1**	**30**	**60**	**120**	**2,987**	**125.5**	**202.0**
0-17 years	*****	30	30	30	90	1,170	174.0	356.0
18-24 years	*****	4	30	30	90	1,064	86.9	136.0
25-34 years	912	1	30	30	90	1,670	94.4	152.1
35-44 years	3,612	1	30	30	90	1,905	103.5	168.0
45-64 years	20,371	1	30	60	102	2,952	124.4	206.1
65+ years	22,623	1	30	90	120	2,987	131.6	204.9
GIP/GLP-1 agonists	**374,607**	**1**	**28**	**45**	**100**	**718**	**85.0**	**96.2**
0-17 years	117	1	28	35	112	472	85.2	99.9
18-24 years	2,919	1	28	30	84	550	69.7	80.9
25-34 years	14,899	1	28	36	84	672	77.0	88.7
35-44 years	45,355	1	28	46	111	664	88.4	101.6
45-64 years	178,931	1	28	51	112	717	90.1	101.6
65+ years	132,386	1	28	36	84	718	78.3	86.9
GLP-1 agonists	**3,321,029**	**1**	**28**	**50**	**90**	**4,992**	**113.1**	**203.1**
0-17 years	10,040	1	30	30	64	1,685	70.8	102.2
18-24 years	30,428	1	28	30	84	4,348	75.4	114.7
25-34 years	135,542	1	28	30	84	3,729	83.2	133.0
35-44 years	364,861	1	28	30	90	4,350	97.3	166.4
45-64 years	1,433,415	1	28	42	91	4,992	113.8	202.7
65+ years	1,346,743	1	28	56	108	4,716	120.8	219.4

Table 4f. Continuous Summary of First Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Age Group

Exposure group	Total Number of Patients	Distribution of First Treatment Episode Duration, days						
		Minimum	Q1	Median	Q3	Maximum	Mean	Standard Deviation
SGLT-2 inhibitors	**2,842,393**	**1**	**30**	**78**	**150**	**3,965**	**144.5**	**234.8**
0-17 years	1,037	2	30	30	90	1,312	83.6	126.6
18-24 years	9,331	1	30	30	90	2,621	94.3	158.9
25-34 years	53,561	1	30	42	90	3,428	106.4	187.3
35-44 years	185,470	1	30	60	90	3,860	118.7	211.0
45-64 years	1,053,786	1	30	60	123	3,965	140.4	237.8
65+ years	1,539,208	1	30	90	180	3,862	152.1	236.9

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; Q = quartile; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

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

Table 4g. Categorical Summary of First Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by T1DM (>50% Code Days)

		Number of Patients by First Treatment Episode Duration							
		1-30 Days		31-60 Days		61-90 Days		91-180 Days	
Exposure group	Total Number of Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
DPP-4 inhibitors	**2,921,067**	**1,257,560**	**100.0%**	**321,694**	**100.0%**	**524,832**	**100.0%**	**345,819**	**100.0%**
With T1DM	17,813	8,568	0.7%	1,958	0.6%	2,829	0.5%	1,925	0.6%
Without T1DM	2,903,254	1,248,992	99.3%	319,736	99.4%	522,003	99.5%	343,894	99.4%
DPP-4/SGLT-2 inhibitors	**47,692**	**20,401**	**100.0%**	**4,869**	**100.0%**	**10,055**	**100.0%**	**5,367**	**100.0%**
With T1DM	209	118	0.6%	20	0.4%	34	0.3%	13	0.2%
Without T1DM	47,483	20,283	99.4%	4,849	99.6%	10,021	99.7%	5,354	99.8%
GIP/GLP-1 agonists	**374,607**	**174,619**	**100.0%**	**63,012**	**100.0%**	**40,492**	**100.0%**	**47,126**	**100.0%**
With T1DM	2,733	1,244	0.7%	402	0.6%	293	0.7%	349	0.7%
Without T1DM	371,874	173,375	99.3%	62,610	99.4%	40,199	99.3%	46,777	99.3%
GLP-1 agonists	**3,321,029**	**1,530,886**	**100.0%**	**520,887**	**100.0%**	**445,720**	**100.0%**	**366,575**	**100.0%**
With T1DM	30,627	14,642	1.0%	4,595	0.9%	4,425	1.0%	3,085	0.8%
Without T1DM	3,290,402	1,516,244	99.0%	516,292	99.1%	441,295	99.0%	363,490	99.2%
SGLT-2 inhibitors	**2,842,393**	**1,071,336**	**100.0%**	**314,450**	**100.0%**	**568,752**	**100.0%**	**372,213**	**100.0%**
With T1DM	18,482	7,747	0.7%	2,042	0.6%	3,499	0.6%	2,132	0.6%
Without T1DM	2,823,911	1,063,589	99.3%	312,408	99.4%	565,253	99.4%	370,081	99.4%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors; T1DM = type 1 diabetes mellitus and T2DM = type 2 diabetes mellitus.

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

Table 4g. Categorical Summary of First Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by T1DM (>50% Code Days)

Exposure group	Total Number of Patients	181-365 Days		366-730 Days		>730 Days	
		Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
DPP-4 inhibitors	**2,921,067**	**237,448**	**100.0%**	**137,116**	**100.0%**	**96,598**	**100.0%**
With T1DM	17,813	1,304	0.5%	727	0.5%	502	0.5%
Without T1DM	2,903,254	236,144	99.5%	136,389	99.5%	96,096	99.5%
DPP-4/SGLT-2 inhibitors	**47,692**	**3,677**	**100.0%**	**2,189**	**100.0%**	**1,134**	**100.0%**
With T1DM	209	13	0.4%	*****	*****	*****	*****
Without T1DM	47,483	3,664	99.6%	*****	*****	*****	*****
GIP/GLP-1 agonists	**374,607**	**38,190**	**100.0%**	**11,168**	**100.0%**	**0**	**NaN**
With T1DM	2,733	318	0.8%	127	1.1%	0	NaN
Without T1DM	371,874	37,872	99.2%	11,041	98.9%	0	NaN
GLP-1 agonists	**3,321,029**	**254,655**	**100.0%**	**131,024**	**100.0%**	**71,282**	**100.0%**
With T1DM	30,627	2,155	0.8%	1,130	0.9%	595	0.8%
Without T1DM	3,290,402	252,500	99.2%	129,894	99.1%	70,687	99.2%
SGLT-2 inhibitors	**2,842,393**	**270,947**	**100.0%**	**157,715**	**100.0%**	**86,980**	**100.0%**
With T1DM	18,482	1,571	0.6%	910	0.6%	581	0.7%
Without T1DM	2,823,911	269,376	99.4%	156,805	99.4%	86,399	99.3%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors; T1DM = type 1 diabetes mellitus and T2DM = type 2 diabetes mellitus.

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

Table 4h. Continuous Summary of First Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by T1DM (>50% Code Days)

Exposure group	Total Number of Patients	Distribution of First Treatment Episode Duration, days						
		Minimum	Q1	Median	Q3	Maximum	Mean	Standard Deviation
DPP-4 inhibitors	**2,921,067**	**1**	**30**	**60**	**120**	**5,884**	**142.5**	**273.2**
With T1DM	17,813	1	30	56	91	5,723	128.1	258.9
Without T1DM	2,903,254	1	30	60	120	5,884	142.6	273.3
DPP-4/SGLT-2 inhibitors	**47,692**	**1**	**30**	**60**	**120**	**2,987**	**125.5**	**202.0**
With T1DM	209	15	30	30	90	1,903	110.2	220.3
Without T1DM	47,483	1	30	60	120	2,987	125.6	201.9
GIP/GLP-1 agonists	**374,607**	**1**	**28**	**45**	**100**	**718**	**85.0**	**96.2**
With T1DM	2,733	1	28	52	114	652	96.0	109.7
Without T1DM	371,874	1	28	45	100	718	85.0	96.0
GLP-1 agonists	**3,321,029**	**1**	**28**	**50**	**90**	**4,992**	**113.1**	**203.1**
With T1DM	30,627	1	30	42	90	4,179	108.3	198.9
Without T1DM	3,290,402	1	28	50	90	4,992	113.2	203.2
SGLT-2 inhibitors	**2,842,393**	**1**	**30**	**78**	**150**	**3,965**	**144.5**	**234.8**
With T1DM	18,482	1	30	60	120	3,389	138.4	240.1
Without T1DM	2,823,911	1	30	78	150	3,965	144.5	234.7

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; Q = quartile; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors; T1DM = type 1 diabetes mellitus and T2DM = type 2 diabetes mellitus.

Table 4i. Categorical Summary of First Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by T2DM (and No T1DM Codes)

		Number of Patients by First Treatment Episode Duration							
		1-30 Days		31-60 Days		61-90 Days		91-180 Days	
Exposure group	Total Number of Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
DPP-4 inhibitors	**2,921,067**	**1,257,560**	**100.0%**	**321,694**	**100.0%**	**524,832**	**100.0%**	**345,819**	**100.0%**
With T2DM	2,542,947	1,081,651	86.0%	277,172	86.2%	464,386	88.5%	303,283	87.7%
Without T2DM	378,120	175,909	14.0%	44,522	13.8%	60,446	11.5%	42,536	12.3%
DPP-4/SGLT-2 inhibitors	**47,692**	**20,401**	**100.0%**	**4,869**	**100.0%**	**10,055**	**100.0%**	**5,367**	**100.0%**
With T2DM	43,824	18,537	90.9%	4,446	91.3%	9,353	93.0%	4,974	92.7%
Without T2DM	3,868	1,864	9.1%	423	8.7%	702	7.0%	393	7.3%
GIP/GLP-1 agonists	**374,607**	**174,619**	**100.0%**	**63,012**	**100.0%**	**40,492**	**100.0%**	**47,126**	**100.0%**
With T2DM	269,915	125,052	71.6%	43,490	69.0%	29,679	73.3%	35,117	74.5%
Without T2DM	104,692	49,567	28.4%	19,522	31.0%	10,813	26.7%	12,009	25.5%
GLP-1 agonists	**3,321,029**	**1,530,886**	**100.0%**	**520,887**	**100.0%**	**445,720**	**100.0%**	**366,575**	**100.0%**
With T2DM	2,535,797	1,149,452	75.1%	391,801	75.2%	353,691	79.4%	280,768	76.6%
Without T2DM	785,232	381,434	24.9%	129,086	24.8%	92,029	20.6%	85,807	23.4%
SGLT-2 inhibitors	**2,842,393**	**1,071,336**	**100.0%**	**314,450**	**100.0%**	**568,752**	**100.0%**	**372,213**	**100.0%**
With T2DM	2,378,768	893,305	83.4%	260,792	82.9%	478,628	84.2%	309,779	83.2%
Without T2DM	463,625	178,031	16.6%	53,658	17.1%	90,124	15.8%	62,434	16.8%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors; T1DM = type 1 diabetes mellitus and T2DM = type 2 diabetes mellitus.

Table 4i. Categorical Summary of First Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by T2DM (and No T1DM Codes)

	181-365 Days		366-730 Days		>730 Days	
Exposure group	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
DPP-4 inhibitors	**237,448**	**100.0%**	**137,116**	**100.0%**	**96,598**	**100.0%**
With T2DM	209,471	88.2%	121,120	88.3%	85,864	88.9%
Without T2DM	27,977	11.8%	15,996	11.7%	10,734	11.1%
DPP-4/SGLT-2 inhibitors	**3,677**	**100.0%**	**2,189**	**100.0%**	**1,134**	**100.0%**
With T2DM	3,422	93.1%	2,044	93.4%	1,048	92.4%
Without T2DM	255	6.9%	145	6.6%	86	7.6%
GIP/GLP-1 agonists	**38,190**	**100.0%**	**11,168**	**100.0%**	**0**	**NaN**
With T2DM	28,387	74.3%	8,190	73.3%	0	NaN
Without T2DM	9,803	25.7%	2,978	26.7%	0	NaN
GLP-1 agonists	**254,655**	**100.0%**	**131,024**	**100.0%**	**71,282**	**100.0%**
With T2DM	193,202	75.9%	104,952	80.1%	61,931	86.9%
Without T2DM	61,453	24.1%	26,072	19.9%	9,351	13.1%
SGLT-2 inhibitors	**270,947**	**100.0%**	**157,715**	**100.0%**	**86,980**	**100.0%**
With T2DM	225,261	83.1%	133,625	84.7%	77,378	89.0%
Without T2DM	45,686	16.9%	24,090	15.3%	9,602	11.0%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors; T1DM = type 1 diabetes mellitus and T2DM = type 2 diabetes mellitus.

Table 4j. Continuous Summary of First Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by T2DM (and No T1DM Codes)

Exposure group	Total Number of Patients	Distribution of First Treatment Episode Duration, days						
		Minimum	Q1	Median	Q3	Maximum	Mean	Standard Deviation
DPP-4 inhibitors	**2,921,067**	**1**	**30**	**60**	**120**	**5,884**	**142.5**	**273.2**
With T2DM	2,542,947	1	30	60	120	5,884	144.4	275.3
Without T2DM	378,120	1	30	60	110	5,723	129.9	258.3
DPP-4/SGLT-2 inhibitors	**47,692**	**1**	**30**	**60**	**120**	**2,987**	**125.5**	**202.0**
With T2DM	43,824	1	30	60	120	2,987	126.4	201.9
Without T2DM	3,868	1	30	58	90	2,764	115.4	202.5
GIP/GLP-1 agonists	**374,607**	**1**	**28**	**45**	**100**	**718**	**85.0**	**96.2**
With T2DM	269,915	1	28	47	108	718	86.5	96.7
Without T2DM	104,692	1	28	39	84	693	81.2	94.6
GLP-1 agonists	**3,321,029**	**1**	**28**	**50**	**90**	**4,992**	**113.1**	**203.1**
With T2DM	2,535,797	1	28	56	97	4,992	117.9	213.6
Without T2DM	785,232	1	28	40	90	4,605	97.7	163.8
SGLT-2 inhibitors	**2,842,393**	**1**	**30**	**78**	**150**	**3,965**	**144.5**	**234.8**
With T2DM	2,378,768	1	30	82	150	3,965	147.3	240.6
Without T2DM	463,625	1	30	61	134	3,861	130.4	201.5

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; Q = quartile; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors; T1DM = type 1 diabetes mellitus and T2DM = type 2 diabetes mellitus.

Table 4K. Categorical Summary of First Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Obesity

Exposure group	Total Number of Patients	Number of Patients by First Treatment Episode Duration							
		1-30 Days		31-60 Days		61-90 Days		91-180 Days	
		Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
DPP-4 inhibitors	**2,921,067**	**1,257,560**	**100.0%**	**321,694**	**100.0%**	**524,832**	**100.0%**	**345,819**	**100.0%**
With Obesity	852,961	356,430	28.3%	93,859	29.2%	158,464	30.2%	104,423	30.2%
Without Obesity	2,068,106	901,130	71.7%	227,835	70.8%	366,368	69.8%	241,396	69.8%
DPP-4/SGLT-2 inhibitors	**47,692**	**20,401**	**100.0%**	**4,869**	**100.0%**	**10,055**	**100.0%**	**5,367**	**100.0%**
With Obesity	18,596	7,730	37.9%	1,951	40.1%	4,029	40.1%	2,120	39.5%
Without Obesity	29,096	12,671	62.1%	2,918	59.9%	6,026	59.9%	3,247	60.5%
GIP/GLP-1 agonists	**374,607**	**174,619**	**100.0%**	**63,012**	**100.0%**	**40,492**	**100.0%**	**47,126**	**100.0%**
With Obesity	255,619	119,160	68.2%	43,358	68.8%	27,554	68.0%	32,116	68.1%
Without Obesity	118,988	55,459	31.8%	19,654	31.2%	12,938	32.0%	15,010	31.9%
GLP-1 agonists	**3,321,029**	**1,530,886**	**100.0%**	**520,887**	**100.0%**	**445,720**	**100.0%**	**366,575**	**100.0%**
With Obesity	1,770,426	791,809	51.7%	285,378	54.8%	237,941	53.4%	202,644	55.3%
Without Obesity	1,550,603	739,077	48.3%	235,509	45.2%	207,779	46.6%	163,931	44.7%
SGLT-2 inhibitors	**2,842,393**	**1,071,336**	**100.0%**	**314,450**	**100.0%**	**568,752**	**100.0%**	**372,213**	**100.0%**
With Obesity	1,167,881	431,439	40.3%	128,756	40.9%	237,394	41.7%	154,927	41.6%
Without Obesity	1,674,512	639,897	59.7%	185,694	59.1%	331,358	58.3%	217,286	58.4%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 4K. Categorical Summary of First Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Obesity

Exposure group	Total Number of Patients	181-365 Days		366-730 Days		>730 Days	
		Number of Patients	Percent of Total	Number of Patients	Percent of Total Patients	Number of Patients	Percent of Total Patients
DPP-4 inhibitors	**2,921,067**	**237,448**	**100.0%**	**137,116**	**100.0%**	**96,598**	**100.0%**
With Obesity	852,961	71,304	30.0%	40,947	29.9%	27,534	28.5%
Without Obesity	2,068,106	166,144	70.0%	96,169	70.1%	69,064	71.5%
DPP-4/SGLT-2 inhibitors	**47,692**	**3,677**	**100.0%**	**2,189**	**100.0%**	**1,134**	**100.0%**
With Obesity	18,596	1,452	39.5%	878	40.1%	436	38.4%
Without Obesity	29,096	2,225	60.5%	1,311	59.9%	698	61.6%
GIP/GLP-1 agonists	**374,607**	**38,190**	**100.0%**	**11,168**	**100.0%**	**0**	**NaN**
With Obesity	255,619	25,788	67.5%	7,643	68.4%	0	NaN
Without Obesity	118,988	12,402	32.5%	3,525	31.6%	0	NaN
GLP-1 agonists	**3,321,029**	**254,655**	**100.0%**	**131,024**	**100.0%**	**71,282**	**100.0%**
With Obesity	1,770,426	143,462	56.3%	72,250	55.1%	36,942	51.8%
Without Obesity	1,550,603	111,193	43.7%	58,774	44.9%	34,340	48.2%
SGLT-2 inhibitors	**2,842,393**	**270,947**	**100.0%**	**157,715**	**100.0%**	**86,980**	**100.0%**
With Obesity	1,167,881	112,778	41.6%	66,310	42.0%	36,277	41.7%
Without Obesity	1,674,512	158,169	58.4%	91,405	58.0%	50,703	58.3%

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; NaN=not a number; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 4l. Continuous Summary of First Treatment Episodes for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024, by Obesity

Exposure group	Total Number of Patients	Distribution of First Treatment Episode Duration, days						
		Minimum	Q1	Median	Q3	Maximum	Mean	Standard Deviation
DPP-4 inhibitors	**2,921,067**	**1**	**30**	**60**	**120**	**5,884**	**142.5**	**273.2**
With Obesity	852,961	1	30	60	120	5,658	141.9	260.2
Without Obesity	2,068,106	1	30	60	120	5,884	142.7	278.4
DPP-4/SGLT-2 inhibitors	**47,692**	**1**	**30**	**60**	**120**	**2,987**	**125.5**	**202.0**
With Obesity	18,596	1	30	60	120	2,708	126.5	198.6
Without Obesity	29,096	1	30	60	116	2,987	125.0	204.1
GIP/GLP-1 agonists	**374,607**	**1**	**28**	**45**	**100**	**718**	**85.0**	**96.2**
With Obesity	255,619	1	28	44	98	717	84.8	96.2
Without Obesity	118,988	1	28	45	103	718	85.5	96.2
GLP-1 agonists	**3,321,029**	**1**	**28**	**50**	**90**	**4,992**	**113.1**	**203.1**
With Obesity	1,770,426	1	28	56	102	4,977	114.2	200.1
Without Obesity	1,550,603	1	28	42	90	4,992	111.9	206.6
SGLT-2 inhibitors	**2,842,393**	**1**	**30**	**78**	**150**	**3,965**	**144.5**	**234.8**
With Obesity	1,167,881	1	30	88	150	3,965	146.1	233.9
Without Obesity	1,674,512	1	30	70	150	3,881	143.4	235.4

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; Q = quartile; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 5. Continuous Summary of All Treatment Episode Gaps for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Total Number of Gaps	Distribution of Treatment Episode Gap Durations, days						
		Minimum	Q1	Median	Q3	Maximum	Mean	Standard Deviation
DPP-4 inhibitors	13,446,889	1	3	8	26	5,655	47.3	182.2
DPP-4/SGLT-2 inhibitors	150,802	1	3	7	22	2,928	28.7	87.5
GIP/GLP-1 agonists	380,343	1	3	7	16	630	17.0	33.8
GLP-1 agonists	12,000,283	1	4	11	31	5,654	51.7	188.0
SGLT-2 inhibitors	7,745,150	1	3	8	26	3,788	48.7	176.2
Canagliflozin	1,627,205	1	3	7	23	3,375	31.1	98.9
Saxenda	169,602	1	5	12	34	2,972	47.1	134.2
Ozempic	3,061,935	1	4	11	29	2,166	33.8	85.7
Wegovy	222,124	1	3	8	21	995	24.0	52.6
Rybelsus	387,400	1	3	8	25	1,346	29.2	69.6
Mounjaro	373,234	1	3	7	16	630	16.7	32.7
Zepbound	6,055	1	2	5	11	110	8.7	10.0

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; Q = quartile; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 6. Continuous Summary of First Treatment Episode Gaps for Exposures of Interest in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Total Number of Patients	Distribution of First Treatment Episode Gap Duration, days						
		Minimum	Q1	Median	Q3	Maximum	Mean	Standard Deviation
DPP-4 inhibitors	2,070,411	1	3	10	38	5,567	81.9	273.0
DPP-4/SGLT-2 inhibitors	31,680	1	3	9	28	2,928	37.8	113.8
GIP/GLP-1 agonists	175,548	1	3	7	17	630	18.5	38.4
GLP-1 agonists	2,269,077	1	5	13	38	5,612	77.5	260.3
SGLT-2 inhibitors	1,748,748	1	3	10	34	3,788	72.9	237.4
Canagliflozin	326,579	1	3	9	28	3,375	42.8	133.8
Saxenda	49,331	1	5	14	33	2,581	48.4	143.5
Ozempic	852,444	1	5	13	33	2,166	42.1	108.5
Wegovy	86,890	1	3	9	25	995	29.4	63.0
Rybelsus	138,928	1	3	10	31	1,345	37.1	86.5
Mounjaro	169,999	1	3	7	17	630	18.3	37.3
Zepbound	5,383	1	2	5	11	110	8.6	9.9

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; Q = quartile; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 7. continuous summary of second and subsequent treatment episode gaps for exposures of interest in the Sentinel distributed database from January 1, 2008 to May 31, 2024

	Total Number of Gaps	Distribution of Treatment Episode Durations Excluding First Treatment Episode Gap, days						
		Minimum	Q1	Median	Q3	Maximum	Mean	Standard Deviation
DPP-4 inhibitors	11,376,478	1	3	7	24	5,655	41.0	159.5
DPP-4/SGLT-2 inhibitors	119,122	1	3	7	21	2,571	26.2	78.8
GIP/GLP-1 agonists	204,795	1	3	7	16	554	15.7	29.2
GLP-1 agonists	9,731,206	1	4	10	29	5,654	45.7	166.1
SGLT-2 inhibitors	5,996,402	1	3	8	24	3,737	41.6	153.1
Canagliflozin	1,300,626	1	3	7	22	3,100	28.2	87.7
Saxenda	120,271	1	4	12	34	2,972	46.6	130.2
Ozempic	2,209,491	1	4	10	28	2,095	30.6	74.8
Wegovy	135,234	1	3	8	19	803	20.6	44.3
Rybelsus	248,472	1	3	7	22	1,346	24.8	57.5
Mounjaro	203,235	1	3	7	16	554	15.4	28.3
Zepbound	672	1	2	6	11	70	9.3	11.1

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; Q = quartile; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 8. Summary of Patient-Level Cohort Attrition in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	DPP-4 inhibitors		DPP-4/SGLT-2 inhibitors	
	Remaining	Excluded	Remaining	Excluded
Members meeting enrollment and demographic requirements				
Enrolled at any point during the query period	495,963,009	N/A	495,963,009	N/A
Had required coverage type (medical and/or drug coverage)	367,385,969	128,577,040	367,385,969	128,577,040
Enrolled during specified age range	367,381,024	4,945	367,381,024	4,945
Had requestable medical charts	367,381,024	0	367,381,024	0
Met demographic requirements (sex, race, and Hispanic origin)	367,222,214	158,810	367,222,214	158,810
Members with a valid index event				
Had any cohort-defining claim during the query period and valid age on the claim date	5,843,467	361,378,747[a]	79,764	367,142,450
Episode defining index claim recorded during the query period	5,821,868	21,599	79,764	0
Members with required pre-index history				
Had sufficient pre-index continuous enrollment	2,921,067	2,900,801	47,692	32,072
Met inclusion and exclusion criteria	2,921,067	0	47,692	0
Had sufficient post-index continuous enrollment	2,921,067	0	47,692	0
Final cohort				
Number of members	2,921,067	N/A	47,692	N/A

[a] <11 individuals excluded due to invalid age (i.e., age <0 or >110 years)

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; N/A=not applicable; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 8. Summary of Patient-Level Cohort Attrition in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	GIP/GLP-1 agonists		GLP-1 agonists	
	Remaining	Excluded	Remaining	Excluded
Members meeting enrollment and demographic requirements				
Enrolled at any point during the query period	495,963,009	N/A	495,963,009	N/A
Had required coverage type (medical and/or drug coverage)	367,385,969	128,577,040	367,385,969	128,577,040
Enrolled during specified age range	367,381,024	4,945	367,381,024	4,945
Had requestable medical charts	367,381,024	0	367,381,024	0
Met demographic requirements (sex, race, and Hispanic origin)	367,222,214	158,810	367,222,214	158,810
Members with a valid index event				
Had any cohort-defining claim during the query period and valid age on the claim date	516,702	366,705,512[a]	5,526,962	361,695,252[a]
Episode defining index claim recorded during the query period	516,702	0	5,524,188	2,774
Members with required pre-index history				
Had sufficient pre-index continuous enrollment	374,607	142,095	3,321,029	2,203,159
Met inclusion and exclusion criteria	374,607	0	3,321,029	0
Had sufficient post-index continuous enrollment	374,607	0	3,321,029	0
Final cohort				
Number of members	374,607	N/A	3,321,029	N/A

[a] <11 individuals excluded due to invalid age (i.e., age <0 or >110 years)

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; N/A=not applicable; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 8. Summary of Patient-Level Cohort Attrition in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	SGLT-2 inhibitors		Canagliflozin	
	Remaining	Excluded	Remaining	Excluded
Members meeting enrollment and demographic requirements				
Enrolled at any point during the query period	495,963,009	N/A	495,963,009	N/A
Had required coverage type (medical and/or drug coverage)	367,385,969	128,577,040	367,385,969	128,577,040
Enrolled during specified age range	367,381,024	4,945	367,381,024	4,945
Had requestable medical charts	367,381,024	0	367,381,024	0
Met demographic requirements (sex, race, and Hispanic origin)	367,222,214	158,810	367,222,214	158,810
Members with a valid index event				
Had any cohort-defining claim during the query period and valid age on the claim date	4,581,932	362,640,282[a]	861,951	366,360,263[a]
Episode defining index claim recorded during the query period	4,581,932	0	861,951	0
Members with required pre-index history				
Had sufficient pre-index continuous enrollment	2,842,393	1,739,539	501,332	360,619
Met inclusion and exclusion criteria	2,842,393	0	501,332	0
Had sufficient post-index continuous enrollment	2,842,393	0	501,332	0
Final cohort				
Number of members	2,842,393	N/A	501,332	N/A

[a] <11 individuals excluded due to invalid age (i.e., age <0 or >110 years)

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; N/A=not applicable; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 8. Summary of Patient-Level Cohort Attrition in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Saxenda		Ozempic	
	Remaining	Excluded	Remaining	Excluded
Members meeting enrollment and demographic requirements				
Enrolled at any point during the query period	495,963,009	N/A	495,963,009	N/A
Had required coverage type (medical and/or drug coverage)	367,385,969	128,577,040	367,385,969	128,577,040
Enrolled during specified age range	367,381,024	4,945	367,381,024	4,945
Had requestable medical charts	367,381,024	0	367,381,024	0
Met demographic requirements (sex, race, and Hispanic origin)	367,222,214	158,810	367,222,214	158,810
Members with a valid index event				
Had any cohort-defining claim during the query period and valid age on the claim date	111,577	367,110,637	2,023,583	365,198,631
Episode defining index claim recorded during the query period	111,577	0	2,023,583	0
Members with required pre-index history				
Had sufficient pre-index continuous enrollment	84,064	27,513	1,364,127	659,456
Met inclusion and exclusion criteria	84,064	0	1,364,127	0
Had sufficient post-index continuous enrollment	84,064	0	1,364,127	0
Final cohort				
Number of members	84,064	N/A	1,364,127	N/A

[a] <11 individuals excluded due to invalid age (i.e., age <0 or >110 years)

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; N/A=not applicable; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 8. Summary of Patient-Level Cohort Attrition in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Wegovy		Rybelsus	
	Remaining	Excluded	Remaining	Excluded
Members meeting enrollment and demographic requirements				
Enrolled at any point during the query period	495,963,009	N/A	495,963,009	N/A
Had required coverage type (medical and/or drug coverage)	367,385,969	128,577,040	367,385,969	128,577,040
Enrolled during specified age range	367,381,024	4,945	367,381,024	4,945
Had requestable medical charts	367,381,024	0	367,381,024	0
Met demographic requirements (sex, race, and Hispanic origin)	367,222,214	158,810	367,222,214	158,810
Members with a valid index event				
Had any cohort-defining claim during the query period and valid age on the claim date	208,152	367,014,062	384,712	366,837,502
Episode defining index claim recorded during the query period	208,152	0	384,712	0
Members with required pre-index history				
Had sufficient pre-index continuous enrollment	163,331	44,821	277,037	107,675
Met inclusion and exclusion criteria	163,331	0	277,037	0
Had sufficient post-index continuous enrollment	163,331	0	277,037	0
Final cohort				
Number of members	163,331	N/A	277,037	N/A

[a] <11 individuals excluded due to invalid age (i.e., age <0 or >110 years)

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; N/A=not applicable; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Table 8. Summary of Patient-Level Cohort Attrition in the Sentinel Distributed Database From January 1, 2008 to May 31, 2024

	Mounjaro		Zepbound	
	Remaining	Excluded	Remaining	Excluded
Members meeting enrollment and demographic requirements				
Enrolled at any point during the query period	495,963,009	N/A	495,963,009	N/A
Had required coverage type (medical and/or drug coverage)	367,385,969	128,577,040	367,385,969	128,577,040
Enrolled during specified age range	367,381,024	4,945	367,381,024	4,945
Had requestable medical charts	367,381,024	0	367,381,024	0
Met demographic requirements (sex, race, and Hispanic origin)	367,222,214	158,810	367,222,214	158,810
Members with a valid index event				
Had any cohort-defining claim during the query period and valid age on the claim date	485,913	366,736,301[a]	33,405	367,188,809
Episode defining index claim recorded during the query period	485,913	0	33,405	0
Members with required pre-index history				
Had sufficient pre-index continuous enrollment	349,937	135,976	27,069	6,336
Met inclusion and exclusion criteria	349,937	0	27,069	0
Had sufficient post-index continuous enrollment	349,937	0	27,069	0
Final cohort				
Number of members	349,937	N/A	27,069	N/A

[a] <11 individuals excluded due to invalid age (i.e., age <0 or >110 years)

DPP-4 inhibitors=dipeptidyl peptidase-4 inhibitors; GIP=glucose-dependent insulinotropic polypeptide; GLP-1 agonists=glucagon-like peptide-1 receptor agonists; N/A=not applicable; SGLT-2 inhibitors=sodium-glucose cotransporter-2 inhibitors.

Appendix A. Dates of Available Data for Each Data Partner (DP) as of February 21, 2025

Masked DP ID	DP Start Date	DP End Date[1]
DP01	01/01/2006	02/29/2024
DP02	01/01/2010	12/31/2023
DP03	01/01/2007	02/29/2024
DP04	01/01/2008	05/31/2024
DP05	01/01/2008	12/31/2023
DP06	01/01/2014	12/31/2021

[1]End 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 Non-Proprietary and Proprietary Names of Medical Products Used to Define Exposures and Exposure Washout in this Request

Non-Proprietary Name	Proprietary Name
DPP-4 Inhibitors	
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
linagliptin	Tradjenta
linagliptin/metformin HCl	Jentadueto
linagliptin/metformin HCl	Jentadueto XR
saxagliptin HCl	Onglyza
saxagliptin HCl	saxagliptin
saxagliptin HCl/metformin HCl	Kombiglyze XR
saxagliptin HCl/metformin HCl	
sitagliptin phosphate	Januvia
sitagliptin phosphate/metformin HCl	Janumet
sitagliptin phosphate/metformin HCl	Janumet XR
sitagliptin phosphate/simvastatin	Juvisync
SGLT-2 Inhibitors	
bexagliflozin	Brenzavvy
bexagliflozin	bexagliflozin
canagliflozin	INVOKANA
canagliflozin	Invokana
canagliflozin/metformin HCl	Invokamet
canagliflozin/metformin HCl	Invokamet XR
dapagliflozin propanediol	Farxiga
dapagliflozin propanediol/metformin HCl	Xigduo XR
empagliflozin	Jardiance
empagliflozin/metformin HCl	Synjardy
empagliflozin/metformin HCl	Synjardy XR
ertugliflozin pidolate	Steglatro
ertugliflozin pidolate/metformin HCl	Segluromet
sotagliflozin	Inpefa
DPP-4/SGLT-2 Inhibitors	
dapagliflozin propanediol/saxagliptin HCl	Qtern
empagliflozin/linagliptin	Glyxambi
empagliflozin/linagliptin/metformin HCl	Trijardy XR
ertugliflozin pidolate/sitagliptin phosphate	Steglujan
GLP-1 Agonists	
albiglutide	Tanzeum
dulaglutide	Trulicity
exenatide	Byetta
exenatide microspheres	Bydureon
exenatide microspheres	Bydureon BCise
insulin degludec/liraglutide	Xultophy 100/3.6
insulin glargine and lixisenatide	Soliqua 100/33
insulin glargine,human recombinant analog/lixisenatide	Soliqua 100/33

Appendix B. List of Non-Proprietary and Proprietary Names of Medical Products Used to Define Exposures and Exposure Washout in this Request

Non-Proprietary Name	Proprietary Name
liraglutide	Saxenda
liraglutide	Victoza 2-Pak
liraglutide	Victoza 3-Pak
lixisenatide	Adlyxin
semaglutide	Ozempic
semaglutide	Rybelsus
semaglutide	Wegovy
GIP/GLP-1 Agonists	
tirzepatide	Mounjaro
tirzepatide	Zepbound
Canagliflozin	
canagliflozin	INVOKANA
canagliflozin	Invokana
canagliflozin/metformin HCl	Invokamet
canagliflozin/metformin HCl	Invokamet XR
Saxenda	
liraglutide	Saxenda
Ozempic	
semaglutide	Ozempic
Wegovy	
semaglutide	Wegovy
Rybelsus	
semaglutide	Rybelsus
Mounjaro	
tirzepatide	Mounjaro
Zepbound	
tirzepatide	Zepbound

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

Code	Description	Code Category	Code Type
Type 1 Diabetes Mellitus			
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], uncontrolled	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
250.23	Diabetes with hyperosmolarity, type I [juvenile type], 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 mellitus 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	Type 1 diabetes mellitus	Diagnosis	ICD-10-CM
E10.1	Type 1 diabetes mellitus with ketoacidosis	Diagnosis	ICD-10-CM
E10.10	Type 1 diabetes mellitus with ketoacidosis without coma	Diagnosis	ICD-10-CM
E10.11	Type 1 diabetes mellitus with ketoacidosis with coma	Diagnosis	ICD-10-CM
E10.2	Type 1 diabetes mellitus with kidney complications	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
E10.3	Type 1 diabetes mellitus with ophthalmic complications	Diagnosis	ICD-10-CM
E10.31	Type 1 diabetes mellitus with unspecified diabetic retinopathy	Diagnosis	ICD-10-CM
E10.311	Type 1 diabetes mellitus with unspecified diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E10.319	Type 1 diabetes mellitus with unspecified diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM

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

Code	Description	Code Category	Code Type
E10.32	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E10.321	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E10.3211	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E10.3212	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E10.3213	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E10.3219	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E10.329	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E10.3291	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E10.3292	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E10.3293	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E10.3299	Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E10.33	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy	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

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

Code	Description	Code Category	Code Type
E10.3399	Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E10.34	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E10.341	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E10.3411	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E10.3412	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E10.3413	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E10.3419	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E10.349	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E10.3491	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E10.3492	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E10.3493	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E10.3499	Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E10.35	Type 1 diabetes mellitus with proliferative diabetic retinopathy	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
E10.352	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula	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

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

Code	Description	Code Category	Code Type
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
E10.353	Type 1 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula	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
E10.354	Type 1 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment	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 eye	Diagnosis	ICD-10-CM
E10.355	Type 1 diabetes mellitus with stable proliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E10.3551	Type 1 diabetes mellitus with stable proliferative diabetic retinopathy, right eye	Diagnosis	ICD-10-CM
E10.3552	Type 1 diabetes mellitus with stable proliferative diabetic retinopathy, left eye	Diagnosis	ICD-10-CM
E10.3553	Type 1 diabetes mellitus with stable proliferative diabetic retinopathy, bilateral	Diagnosis	ICD-10-CM
E10.3559	Type 1 diabetes mellitus with stable proliferative diabetic retinopathy, unspecified eye	Diagnosis	ICD-10-CM
E10.359	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
E10.3593	Type 1 diabetes mellitus with proliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM

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

Code	Description	Code Category	Code Type
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
E10.37	Type 1 diabetes mellitus with diabetic macular edema, resolved following treatment	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
E10.4	Type 1 diabetes mellitus with neurological complications	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
E10.5	Type 1 diabetes mellitus with circulatory complications	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
E10.6	Type 1 diabetes mellitus with other specified complications	Diagnosis	ICD-10-CM
E10.61	Type 1 diabetes mellitus with diabetic arthropathy	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
E10.62	Type 1 diabetes mellitus with skin complications	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
E10.63	Type 1 diabetes mellitus with oral 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
E10.64	Type 1 diabetes mellitus with hypoglycemia	Diagnosis	ICD-10-CM
E10.641	Type 1 diabetes mellitus with hypoglycemia with coma	Diagnosis	ICD-10-CM

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

Code	Description	Code Category	Code Type
E10.649	Type 1 diabetes mellitus with hypoglycemia without coma	Diagnosis	ICD-10-CM
E10.65	Type 1 diabetes mellitus with hyperglycemia	Diagnosis	ICD-10-CM
E10.69	Type 1 diabetes mellitus with other specified complication	Diagnosis	ICD-10-CM
E10.8	Type 1 diabetes mellitus with unspecified complications	Diagnosis	ICD-10-CM
E10.9	Type 1 diabetes mellitus without complications	Diagnosis	ICD-10-CM
Type 2 Diabetes Mellitus			
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
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, uncontrolled	Diagnosis	ICD-9-CM
250.80	Diabetes with other specified manifestations, type II or unspecified type, not stated as uncontrolled	Diagnosis	ICD-9-CM
250.82	Diabetes with other specified manifestations, type II or unspecified type, uncontrolled	Diagnosis	ICD-9-CM
250.90	Diabetes with unspecified complication, type II or unspecified type, not stated as uncontrolled	Diagnosis	ICD-9-CM
250.92	Diabetes with unspecified complication, type II or unspecified type, uncontrolled	Diagnosis	ICD-9-CM
E11	Type 2 diabetes mellitus	Diagnosis	ICD-10-CM
E11.0	Type 2 diabetes mellitus with hyperosmolarity	Diagnosis	ICD-10-CM
E11.00	Type 2 diabetes mellitus with hyperosmolarity without nonketotic hyperglycemic-hyperosmolar coma (NKHHC)	Diagnosis	ICD-10-CM
E11.01	Type 2 diabetes mellitus with hyperosmolarity with coma	Diagnosis	ICD-10-CM
E11.1	Type 2 diabetes mellitus with ketoacidosis	Diagnosis	ICD-10-CM

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

Code	Description	Code Category	Code Type
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
E11.2	Type 2 diabetes mellitus with kidney complications	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
E11.3	Type 2 diabetes mellitus with ophthalmic complications	Diagnosis	ICD-10-CM
E11.31	Type 2 diabetes mellitus with unspecified diabetic retinopathy	Diagnosis	ICD-10-CM
E11.311	Type 2 diabetes mellitus with unspecified diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E11.319	Type 2 diabetes mellitus with unspecified diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E11.32	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E11.321	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM
E11.3211	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, right eye	Diagnosis	ICD-10-CM
E11.3212	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, left eye	Diagnosis	ICD-10-CM
E11.3213	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, bilateral	Diagnosis	ICD-10-CM
E11.3219	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy with macular edema, unspecified eye	Diagnosis	ICD-10-CM
E11.329	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E11.3291	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E11.3292	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E11.3293	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E11.3299	Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E11.33	Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy	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

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

Code	Description	Code Category	Code Type
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
E11.34	Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy	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
E11.35	Type 2 diabetes mellitus with proliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E11.351	Type 2 diabetes mellitus with proliferative diabetic retinopathy with macular edema	Diagnosis	ICD-10-CM

Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Baseline Characteristics 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
E11.352	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment involving the macula	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
E11.353	Type 2 diabetes mellitus with proliferative diabetic retinopathy with traction retinal detachment not involving the macula	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
E11.354	Type 2 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment	Diagnosis	ICD-10-CM
E11.3541	Type 2 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, right eye	Diagnosis	ICD-10-CM
E11.3542	Type 2 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, left eye	Diagnosis	ICD-10-CM
E11.3543	Type 2 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, bilateral	Diagnosis	ICD-10-CM

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

Code	Description	Code Category	Code Type
E11.3549	Type 2 diabetes mellitus with proliferative diabetic retinopathy with combined traction retinal detachment and rhegmatogenous retinal detachment, unspecified eye	Diagnosis	ICD-10-CM
E11.355	Type 2 diabetes mellitus with stable proliferative diabetic retinopathy	Diagnosis	ICD-10-CM
E11.3551	Type 2 diabetes mellitus with stable proliferative diabetic retinopathy, right eye	Diagnosis	ICD-10-CM
E11.3552	Type 2 diabetes mellitus with stable proliferative diabetic retinopathy, left eye	Diagnosis	ICD-10-CM
E11.3553	Type 2 diabetes mellitus with stable proliferative diabetic retinopathy, bilateral	Diagnosis	ICD-10-CM
E11.3559	Type 2 diabetes mellitus with stable proliferative diabetic retinopathy, unspecified eye	Diagnosis	ICD-10-CM
E11.359	Type 2 diabetes mellitus with proliferative diabetic retinopathy without macular edema	Diagnosis	ICD-10-CM
E11.3591	Type 2 diabetes mellitus with proliferative diabetic retinopathy without macular edema, right eye	Diagnosis	ICD-10-CM
E11.3592	Type 2 diabetes mellitus with proliferative diabetic retinopathy without macular edema, left eye	Diagnosis	ICD-10-CM
E11.3593	Type 2 diabetes mellitus with proliferative diabetic retinopathy without macular edema, bilateral	Diagnosis	ICD-10-CM
E11.3599	Type 2 diabetes mellitus with proliferative diabetic retinopathy without macular edema, unspecified eye	Diagnosis	ICD-10-CM
E11.36	Type 2 diabetes mellitus with diabetic cataract	Diagnosis	ICD-10-CM
E11.37	Type 2 diabetes mellitus with diabetic macular edema, resolved following treatment	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
E11.4	Type 2 diabetes mellitus with neurological complications	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
E11.5	Type 2 diabetes mellitus with circulatory complications	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
E11.6	Type 2 diabetes mellitus with other specified complications	Diagnosis	ICD-10-CM
E11.61	Type 2 diabetes mellitus with diabetic arthropathy	Diagnosis	ICD-10-CM
E11.610	Type 2 diabetes mellitus with diabetic neuropathic arthropathy	Diagnosis	ICD-10-CM

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

Code	Description	Code Category	Code Type
E11.618	Type 2 diabetes mellitus with other diabetic arthropathy	Diagnosis	ICD-10-CM
E11.62	Type 2 diabetes mellitus with skin complications	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
E11.63	Type 2 diabetes mellitus with oral 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
E11.64	Type 2 diabetes mellitus with hypoglycemia	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
Obesity			
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
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
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

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

Code	Description	Code Category	Code Type
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

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

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
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

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

Code	Description	Code Category	Code Type
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
BMI <20			
Z68.1	Body mass index [BMI] 19.9 or less, adult	Diagnosis	ICD-10-CM
BMI 20-24			
Z68.20	Body mass index [BMI] 20.0-20.9, adult	Diagnosis	ICD-10-CM
Z68.21	Body mass index [BMI] 21.0-21.9, adult	Diagnosis	ICD-10-CM
Z68.22	Body mass index [BMI] 22.0-22.9, adult	Diagnosis	ICD-10-CM
Z68.23	Body mass index [BMI] 23.0-23.9, adult	Diagnosis	ICD-10-CM
Z68.24	Body mass index [BMI] 24.0-24.9, adult	Diagnosis	ICD-10-CM
BMI 25-29			
V85.2	Body Mass Index between 25-29, adult	Diagnosis	ICD-9-CM
V85.21	Body Mass Index 25.0-25.9, adult	Diagnosis	ICD-9-CM
V85.22	Body Mass Index 26.0-26.9, adult	Diagnosis	ICD-9-CM
V85.23	Body Mass Index 27.0-27.9, adult	Diagnosis	ICD-9-CM
V85.24	Body Mass Index 28.0-28.9, adult	Diagnosis	ICD-9-CM
V85.25	Body Mass Index 29.0-29.9, adult	Diagnosis	ICD-9-CM
Z68.25	Body mass index [BMI] 25.0-25.9, adult	Diagnosis	ICD-10-CM
Z68.26	Body mass index [BMI] 26.0-26.9, adult	Diagnosis	ICD-10-CM
Z68.27	Body mass index [BMI] 27.0-27.9, adult	Diagnosis	ICD-10-CM
Z68.28	Body mass index [BMI] 28.0-28.9, adult	Diagnosis	ICD-10-CM
Z68.29	Body mass index [BMI] 29.0-29.9, adult	Diagnosis	ICD-10-CM
BMI 30-39			
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

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

Code	Description	Code Category	Code Type
V85.39	Body Mass Index 39.0-39.9, adult	Diagnosis	ICD-9-CM
Z68.3	Body mass index [BMI] 30-39, adult	Diagnosis	ICD-10-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
BMI 40-69			
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
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] 50.0-59.9, adult	Diagnosis	ICD-10-CM
Z68.44	Body mass index [BMI] 60.0-69.9, adult	Diagnosis	ICD-10-CM
BMI >=70			
V85.45	Body Mass Index 70 and over, adult	Diagnosis	ICD-9-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
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

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

Code	Description	Code Category	Code Type
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

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

Code	Description	Code Category	Code Type
404.91	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	Diagnosis	ICD-9-CM
404.92	Hypertensive heart and chronic kidney disease, unspecified, without heart failure and with chronic kidney disease stage V or end stage renal disease	Diagnosis	ICD-9-CM
404.93	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and chronic kidney disease stage V or end stage renal disease	Diagnosis	ICD-9-CM
405.01	Secondary renovascular hypertension, malignant	Diagnosis	ICD-9-CM
405.09	Other secondary hypertension, malignant	Diagnosis	ICD-9-CM
405.11	Secondary renovascular hypertension, benign	Diagnosis	ICD-9-CM
405.19	Other secondary hypertension, benign	Diagnosis	ICD-9-CM
405.91	Secondary renovascular hypertension, unspecified	Diagnosis	ICD-9-CM
405.99	Other secondary hypertension, unspecified	Diagnosis	ICD-9-CM
437.2	Hypertensive encephalopathy	Diagnosis	ICD-9-CM
H35.031	Hypertensive retinopathy, right eye	Diagnosis	ICD-10-CM
H35.032	Hypertensive retinopathy, left eye	Diagnosis	ICD-10-CM
H35.033	Hypertensive retinopathy, bilateral	Diagnosis	ICD-10-CM
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

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

Code	Description	Code Category	Code Type
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
E78.5	Hyperlipidemia, unspecified	Diagnosis	ICD-10-CM
Ischemic Heart Disease			
410.00	Acute myocardial infarction of anterolateral wall, episode of care unspecified	Diagnosis	ICD-9-CM
410.01	Acute myocardial infarction of anterolateral wall, initial episode of care	Diagnosis	ICD-9-CM
410.02	Acute myocardial infarction of anterolateral wall, subsequent episode of care	Diagnosis	ICD-9-CM
410.10	Acute myocardial infarction of other anterior wall, episode of care unspecified	Diagnosis	ICD-9-CM
410.11	Acute myocardial infarction of other anterior wall, initial episode of care	Diagnosis	ICD-9-CM
410.12	Acute myocardial infarction of other anterior wall, subsequent episode of care	Diagnosis	ICD-9-CM
410.20	Acute myocardial infarction of inferolateral wall, episode of care unspecified	Diagnosis	ICD-9-CM
410.21	Acute myocardial infarction of inferolateral wall, initial episode of care	Diagnosis	ICD-9-CM
410.22	Acute myocardial infarction of inferolateral wall, subsequent episode of care	Diagnosis	ICD-9-CM
410.30	Acute myocardial infarction of inferoposterior wall, episode of care unspecified	Diagnosis	ICD-9-CM
410.31	Acute myocardial infarction of inferoposterior wall, initial episode of care	Diagnosis	ICD-9-CM

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

Code	Description	Code Category	Code Type
410.32	Acute myocardial infarction of inferoposterior wall, subsequent episode of care	Diagnosis	ICD-9-CM
410.40	Acute myocardial infarction of other inferior wall, episode of care unspecified	Diagnosis	ICD-9-CM
410.41	Acute myocardial infarction of other inferior wall, initial episode of care	Diagnosis	ICD-9-CM
410.42	Acute myocardial infarction of other inferior wall, subsequent episode of care	Diagnosis	ICD-9-CM
410.50	Acute myocardial infarction of other lateral wall, episode of care unspecified	Diagnosis	ICD-9-CM
410.51	Acute myocardial infarction of other lateral wall, initial episode of care	Diagnosis	ICD-9-CM
410.52	Acute myocardial infarction of other lateral wall, subsequent episode of care	Diagnosis	ICD-9-CM
410.60	Acute myocardial infarction, true posterior wall infarction, episode of care unspecified	Diagnosis	ICD-9-CM
410.61	Acute myocardial infarction, true posterior wall infarction, initial episode of care	Diagnosis	ICD-9-CM
410.62	Acute myocardial infarction, true posterior wall infarction, subsequent episode of care	Diagnosis	ICD-9-CM
410.70	Acute myocardial infarction, subendocardial infarction, episode of care unspecified	Diagnosis	ICD-9-CM
410.71	Acute myocardial infarction, subendocardial infarction, initial episode of care	Diagnosis	ICD-9-CM
410.72	Acute myocardial infarction, subendocardial infarction, subsequent episode of care	Diagnosis	ICD-9-CM
410.80	Acute myocardial infarction of other specified sites, episode of care unspecified	Diagnosis	ICD-9-CM
410.81	Acute myocardial infarction of other specified sites, initial episode of care	Diagnosis	ICD-9-CM
410.82	Acute myocardial infarction of other specified sites, subsequent episode of care	Diagnosis	ICD-9-CM
410.90	Acute myocardial infarction, unspecified site, episode of care unspecified	Diagnosis	ICD-9-CM
410.91	Acute myocardial infarction, unspecified site, initial episode of care	Diagnosis	ICD-9-CM
410.92	Acute myocardial infarction, unspecified site, subsequent episode of care	Diagnosis	ICD-9-CM
411.0	Postmyocardial infarction syndrome	Diagnosis	ICD-9-CM
411.1	Intermediate coronary syndrome	Diagnosis	ICD-9-CM
411.81	Acute coronary occlusion without myocardial infarction	Diagnosis	ICD-9-CM
411.89	Other acute and subacute form of ischemic heart disease	Diagnosis	ICD-9-CM
412	Old myocardial infarction	Diagnosis	ICD-9-CM
413.0	Angina decubitus	Diagnosis	ICD-9-CM
413.1	Prinzmetal angina	Diagnosis	ICD-9-CM
413.9	Other and unspecified angina pectoris	Diagnosis	ICD-9-CM
414.00	Coronary atherosclerosis of unspecified type of vessel, native or graft	Diagnosis	ICD-9-CM
414.01	Coronary atherosclerosis of native coronary artery	Diagnosis	ICD-9-CM
414.02	Coronary atherosclerosis of autologous vein bypass graft	Diagnosis	ICD-9-CM
414.03	Coronary atherosclerosis of nonautologous biological bypass graft	Diagnosis	ICD-9-CM
414.04	Coronary atherosclerosis of artery bypass graft	Diagnosis	ICD-9-CM
414.05	Coronary atherosclerosis of unspecified type of bypass graft	Diagnosis	ICD-9-CM

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

Code	Description	Code Category	Code Type
414.06	Coronary atherosclerosis, of native coronary artery of transplanted heart	Diagnosis	ICD-9-CM
414.07	Coronary atherosclerosis, of bypass graft (artery) (vein) of transplanted heart	Diagnosis	ICD-9-CM
414.12	Dissection of coronary artery	Diagnosis	ICD-9-CM
414.2	Chronic total occlusion of coronary artery	Diagnosis	ICD-9-CM
414.3	Coronary atherosclerosis due to lipid rich plaque	Diagnosis	ICD-9-CM
414.4	Coronary atherosclerosis due to calcified coronary lesion	Diagnosis	ICD-9-CM
414.8	Other specified forms of chronic ischemic heart disease	Diagnosis	ICD-9-CM
414.9	Unspecified chronic ischemic heart disease	Diagnosis	ICD-9-CM
I20.0	Unstable angina	Diagnosis	ICD-10-CM
I20.1	Angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I20.2	Refractory angina pectoris	Diagnosis	ICD-10-CM
I20.8	Other forms of angina pectoris	Diagnosis	ICD-10-CM
I20.9	Angina pectoris, unspecified	Diagnosis	ICD-10-CM
I21.01	ST elevation (STEMI) myocardial infarction involving left main coronary artery	Diagnosis	ICD-10-CM
I21.02	ST elevation (STEMI) myocardial infarction involving left anterior descending coronary artery	Diagnosis	ICD-10-CM
I21.09	ST elevation (STEMI) myocardial infarction involving other coronary artery of anterior wall	Diagnosis	ICD-10-CM
I21.11	ST elevation (STEMI) myocardial infarction involving right coronary artery	Diagnosis	ICD-10-CM
I21.19	ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall	Diagnosis	ICD-10-CM
I21.21	ST elevation (STEMI) myocardial infarction involving left circumflex coronary artery	Diagnosis	ICD-10-CM
I21.29	ST elevation (STEMI) myocardial infarction involving other sites	Diagnosis	ICD-10-CM
I21.3	ST elevation (STEMI) myocardial infarction of unspecified site	Diagnosis	ICD-10-CM
I21.4	Non-ST elevation (NSTEMI) myocardial infarction	Diagnosis	ICD-10-CM
I21.A1	Myocardial infarction type 2	Diagnosis	ICD-10-CM
I21.A9	Other myocardial infarction type	Diagnosis	ICD-10-CM
I22.0	Subsequent ST elevation (STEMI) myocardial infarction of anterior wall	Diagnosis	ICD-10-CM
I22.1	Subsequent ST elevation (STEMI) myocardial infarction of inferior wall	Diagnosis	ICD-10-CM
I22.2	Subsequent non-ST elevation (NSTEMI) myocardial infarction	Diagnosis	ICD-10-CM
I22.8	Subsequent ST elevation (STEMI) myocardial infarction of other sites	Diagnosis	ICD-10-CM
I22.9	Subsequent ST elevation (STEMI) myocardial infarction of unspecified site	Diagnosis	ICD-10-CM
I23.0	Hemopericardium as current complication following acute myocardial infarction	Diagnosis	ICD-10-CM
I23.1	Atrial septal defect as current complication following acute myocardial infarction	Diagnosis	ICD-10-CM
I23.2	Ventricular septal defect as current complication following acute myocardial infarction	Diagnosis	ICD-10-CM

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

Code	Description	Code Category	Code Type
I23.3	Rupture of cardiac wall without hemopericardium as current complication following acute myocardial infarction	Diagnosis	ICD-10-CM
I23.4	Rupture of chordae tendineae as current complication following acute myocardial infarction	Diagnosis	ICD-10-CM
I23.5	Rupture of papillary muscle as current complication following acute myocardial infarction	Diagnosis	ICD-10-CM
I23.6	Thrombosis of atrium, auricular appendage, and ventricle as current complications following acute myocardial infarction	Diagnosis	ICD-10-CM
I23.7	Postinfarction angina	Diagnosis	ICD-10-CM
I23.8	Other current complications following acute myocardial infarction	Diagnosis	ICD-10-CM
I24.0	Acute coronary thrombosis not resulting in myocardial infarction	Diagnosis	ICD-10-CM
I24.1	Dressler's syndrome	Diagnosis	ICD-10-CM
I24.8	Other forms of acute ischemic heart disease	Diagnosis	ICD-10-CM
I24.9	Acute ischemic heart disease, unspecified	Diagnosis	ICD-10-CM
I25.10	Atherosclerotic heart disease of native coronary artery without angina pectoris	Diagnosis	ICD-10-CM
I25.110	Atherosclerotic heart disease of native coronary artery with unstable angina pectoris	Diagnosis	ICD-10-CM
I25.111	Atherosclerotic heart disease of native coronary artery with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.112	Atherosclerotic heart disease of native coronary artery with refractory angina pectoris	Diagnosis	ICD-10-CM
I25.118	Atherosclerotic heart disease of native coronary artery with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.119	Atherosclerotic heart disease of native coronary artery with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.2	Old myocardial infarction	Diagnosis	ICD-10-CM
I25.3	Aneurysm of heart	Diagnosis	ICD-10-CM
I25.41	Coronary artery aneurysm	Diagnosis	ICD-10-CM
I25.42	Coronary artery dissection	Diagnosis	ICD-10-CM
I25.5	Ischemic cardiomyopathy	Diagnosis	ICD-10-CM
I25.6	Silent myocardial ischemia	Diagnosis	ICD-10-CM
I25.700	Atherosclerosis of coronary artery bypass graft(s), unspecified, with unstable angina pectoris	Diagnosis	ICD-10-CM
I25.701	Atherosclerosis of coronary artery bypass graft(s), unspecified, with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.702	Atherosclerosis of coronary artery bypass graft(s), unspecified, with refractory angina pectoris	Diagnosis	ICD-10-CM
I25.708	Atherosclerosis of coronary artery bypass graft(s), unspecified, with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.709	Atherosclerosis of coronary artery bypass graft(s), unspecified, with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.710	Atherosclerosis of autologous vein coronary artery bypass graft(s) with unstable angina pectoris	Diagnosis	ICD-10-CM
I25.711	Atherosclerosis of autologous vein coronary artery bypass graft(s) with angina pectoris with documented spasm	Diagnosis	ICD-10-CM

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Code	Description	Code Category	Code Type
I25.712	Atherosclerosis of autologous vein coronary artery bypass graft(s) with refractory angina pectoris	Diagnosis	ICD-10-CM
I25.718	Atherosclerosis of autologous vein coronary artery bypass graft(s) with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.719	Atherosclerosis of autologous vein coronary artery bypass graft(s) with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.720	Atherosclerosis of autologous artery coronary artery bypass graft(s) with unstable angina pectoris	Diagnosis	ICD-10-CM
I25.721	Atherosclerosis of autologous artery coronary artery bypass graft(s) with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.722	Atherosclerosis of autologous artery coronary artery bypass graft(s) with refractory angina pectoris	Diagnosis	ICD-10-CM
I25.728	Atherosclerosis of autologous artery coronary artery bypass graft(s) with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.729	Atherosclerosis of autologous artery coronary artery bypass graft(s) with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.730	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unstable angina pectoris	Diagnosis	ICD-10-CM
I25.731	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.732	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with refractory angina pectoris	Diagnosis	ICD-10-CM
I25.738	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.739	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.750	Atherosclerosis of native coronary artery of transplanted heart with unstable angina	Diagnosis	ICD-10-CM
I25.751	Atherosclerosis of native coronary artery of transplanted heart with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.752	Atherosclerosis of native coronary artery of transplanted heart with refractory angina pectoris	Diagnosis	ICD-10-CM
I25.758	Atherosclerosis of native coronary artery of transplanted heart with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.759	Atherosclerosis of native coronary artery of transplanted heart with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.760	Atherosclerosis of bypass graft of coronary artery of transplanted heart with unstable angina	Diagnosis	ICD-10-CM
I25.761	Atherosclerosis of bypass graft of coronary artery of transplanted heart with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.762	Atherosclerosis of bypass graft of coronary artery of transplanted heart with refractory angina pectoris	Diagnosis	ICD-10-CM
I25.768	Atherosclerosis of bypass graft of coronary artery of transplanted heart with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.769	Atherosclerosis of bypass graft of coronary artery of transplanted heart with unspecified angina pectoris	Diagnosis	ICD-10-CM

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

Code	Description	Code Category	Code Type
I25.790	Atherosclerosis of other coronary artery bypass graft(s) with unstable angina pectoris	Diagnosis	ICD-10-CM
I25.791	Atherosclerosis of other coronary artery bypass graft(s) with angina pectoris with documented spasm	Diagnosis	ICD-10-CM
I25.792	Atherosclerosis of other coronary artery bypass graft(s) with refractory angina pectoris	Diagnosis	ICD-10-CM
I25.798	Atherosclerosis of other coronary artery bypass graft(s) with other forms of angina pectoris	Diagnosis	ICD-10-CM
I25.799	Atherosclerosis of other coronary artery bypass graft(s) with unspecified angina pectoris	Diagnosis	ICD-10-CM
I25.810	Atherosclerosis of coronary artery bypass graft(s) without angina pectoris	Diagnosis	ICD-10-CM
I25.811	Atherosclerosis of native coronary artery of transplanted heart without angina pectoris	Diagnosis	ICD-10-CM
I25.812	Atherosclerosis of bypass graft of coronary artery of transplanted heart without angina pectoris	Diagnosis	ICD-10-CM
I25.82	Chronic total occlusion of coronary artery	Diagnosis	ICD-10-CM
I25.83	Coronary atherosclerosis due to lipid rich plaque	Diagnosis	ICD-10-CM
I25.84	Coronary atherosclerosis due to calcified coronary lesion	Diagnosis	ICD-10-CM
I25.89	Other forms of chronic ischemic heart disease	Diagnosis	ICD-10-CM
I25.9	Chronic ischemic heart disease, unspecified	Diagnosis	ICD-10-CM
Cerebrovascular Disease			
430	Subarachnoid hemorrhage	Diagnosis	ICD-9-CM
431	Intracerebral hemorrhage	Diagnosis	ICD-9-CM
433.01	Occlusion and stenosis of basilar artery with cerebral infarction	Diagnosis	ICD-9-CM
433.11	Occlusion and stenosis of carotid artery with cerebral infarction	Diagnosis	ICD-9-CM
433.21	Occlusion and stenosis of vertebral artery with cerebral infarction	Diagnosis	ICD-9-CM
433.31	Occlusion and stenosis of multiple and bilateral precerebral arteries with cerebral infarction	Diagnosis	ICD-9-CM
433.81	Occlusion and stenosis of other specified precerebral artery with cerebral infarction	Diagnosis	ICD-9-CM
433.91	Occlusion and stenosis of unspecified precerebral artery with cerebral infarction	Diagnosis	ICD-9-CM
434.00	Cerebral thrombosis without mention of cerebral infarction	Diagnosis	ICD-9-CM
434.01	Cerebral thrombosis with cerebral infarction	Diagnosis	ICD-9-CM
434.10	Cerebral embolism without mention of cerebral infarction	Diagnosis	ICD-9-CM
434.11	Cerebral embolism with cerebral infarction	Diagnosis	ICD-9-CM
434.90	Unspecified cerebral artery occlusion without mention of cerebral infarction	Diagnosis	ICD-9-CM
434.91	Unspecified cerebral artery occlusion with cerebral infarction	Diagnosis	ICD-9-CM
435.0	Basilar artery syndrome	Diagnosis	ICD-9-CM
435.1	Vertebral artery syndrome	Diagnosis	ICD-9-CM
435.3	Vertebrobasilar artery syndrome	Diagnosis	ICD-9-CM
435.8	Other specified transient cerebral ischemias	Diagnosis	ICD-9-CM
435.9	Unspecified transient cerebral ischemia	Diagnosis	ICD-9-CM

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

Code	Description	Code Category	Code Type
436	Acute, but ill-defined, cerebrovascular disease	Diagnosis	ICD-9-CM
997.02	Iatrogenic cerebrovascular infarction or hemorrhage	Diagnosis	ICD-9-CM
G45.0	Vertebro-basilar artery syndrome	Diagnosis	ICD-10-CM
G45.1	Carotid artery syndrome (hemispheric)	Diagnosis	ICD-10-CM
G45.2	Multiple and bilateral precerebral artery syndromes	Diagnosis	ICD-10-CM
G45.3	Amaurosis fugax	Diagnosis	ICD-10-CM
G45.8	Other transient cerebral ischemic attacks and related syndromes	Diagnosis	ICD-10-CM
G45.9	Transient cerebral ischemic attack, unspecified	Diagnosis	ICD-10-CM
G46.0	Middle cerebral artery syndrome	Diagnosis	ICD-10-CM
G46.1	Anterior cerebral artery syndrome	Diagnosis	ICD-10-CM
G46.2	Posterior cerebral artery syndrome	Diagnosis	ICD-10-CM
G46.3	Brain stem stroke syndrome	Diagnosis	ICD-10-CM
G46.4	Cerebellar stroke syndrome	Diagnosis	ICD-10-CM
G46.5	Pure motor lacunar syndrome	Diagnosis	ICD-10-CM
G46.6	Pure sensory lacunar syndrome	Diagnosis	ICD-10-CM
G46.7	Other lacunar syndromes	Diagnosis	ICD-10-CM
G46.8	Other vascular syndromes of brain in cerebrovascular diseases	Diagnosis	ICD-10-CM
G97.31	Intraoperative hemorrhage and hematoma of a nervous system organ or structure complicating a nervous system procedure	Diagnosis	ICD-10-CM
G97.32	Intraoperative hemorrhage and hematoma of a nervous system organ or structure complicating other procedure	Diagnosis	ICD-10-CM
I60.00	Nontraumatic subarachnoid hemorrhage from unspecified carotid siphon and bifurcation	Diagnosis	ICD-10-CM
I60.01	Nontraumatic subarachnoid hemorrhage from right carotid siphon and bifurcation	Diagnosis	ICD-10-CM
I60.02	Nontraumatic subarachnoid hemorrhage from left carotid siphon and bifurcation	Diagnosis	ICD-10-CM
I60.10	Nontraumatic subarachnoid hemorrhage from unspecified middle cerebral artery	Diagnosis	ICD-10-CM
I60.11	Nontraumatic subarachnoid hemorrhage from right middle cerebral artery	Diagnosis	ICD-10-CM
I60.12	Nontraumatic subarachnoid hemorrhage from left middle cerebral artery	Diagnosis	ICD-10-CM
I60.2	Nontraumatic subarachnoid hemorrhage from anterior communicating artery	Diagnosis	ICD-10-CM
I60.20	Nontraumatic subarachnoid hemorrhage from unspecified anterior communicating artery	Diagnosis	ICD-10-CM
I60.21	Nontraumatic subarachnoid hemorrhage from right anterior communicating artery	Diagnosis	ICD-10-CM
I60.22	Nontraumatic subarachnoid hemorrhage from left anterior communicating artery	Diagnosis	ICD-10-CM
I60.30	Nontraumatic subarachnoid hemorrhage from unspecified posterior communicating artery	Diagnosis	ICD-10-CM
I60.31	Nontraumatic subarachnoid hemorrhage from right posterior communicating artery	Diagnosis	ICD-10-CM

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

Code	Description	Code Category	Code Type
I60.32	Nontraumatic subarachnoid hemorrhage from left posterior communicating artery	Diagnosis	ICD-10-CM
I60.4	Nontraumatic subarachnoid hemorrhage from basilar artery	Diagnosis	ICD-10-CM
I60.50	Nontraumatic subarachnoid hemorrhage from unspecified vertebral artery	Diagnosis	ICD-10-CM
I60.51	Nontraumatic subarachnoid hemorrhage from right vertebral artery	Diagnosis	ICD-10-CM
I60.52	Nontraumatic subarachnoid hemorrhage from left vertebral artery	Diagnosis	ICD-10-CM
I60.6	Nontraumatic subarachnoid hemorrhage from other intracranial arteries	Diagnosis	ICD-10-CM
I60.7	Nontraumatic subarachnoid hemorrhage from unspecified intracranial artery	Diagnosis	ICD-10-CM
I60.8	Other nontraumatic subarachnoid hemorrhage	Diagnosis	ICD-10-CM
I60.9	Nontraumatic subarachnoid hemorrhage, unspecified	Diagnosis	ICD-10-CM
I61.0	Nontraumatic intracerebral hemorrhage in hemisphere, subcortical	Diagnosis	ICD-10-CM
I61.1	Nontraumatic intracerebral hemorrhage in hemisphere, cortical	Diagnosis	ICD-10-CM
I61.2	Nontraumatic intracerebral hemorrhage in hemisphere, unspecified	Diagnosis	ICD-10-CM
I61.3	Nontraumatic intracerebral hemorrhage in brain stem	Diagnosis	ICD-10-CM
I61.4	Nontraumatic intracerebral hemorrhage in cerebellum	Diagnosis	ICD-10-CM
I61.5	Nontraumatic intracerebral hemorrhage, intraventricular	Diagnosis	ICD-10-CM
I61.6	Nontraumatic intracerebral hemorrhage, multiple localized	Diagnosis	ICD-10-CM
I61.8	Other nontraumatic intracerebral hemorrhage	Diagnosis	ICD-10-CM
I61.9	Nontraumatic intracerebral hemorrhage, unspecified	Diagnosis	ICD-10-CM
I62.00	Nontraumatic subdural hemorrhage, unspecified	Diagnosis	ICD-10-CM
I62.01	Nontraumatic acute subdural hemorrhage	Diagnosis	ICD-10-CM
I62.02	Nontraumatic subacute subdural hemorrhage	Diagnosis	ICD-10-CM
I62.9	Nontraumatic intracranial hemorrhage, unspecified	Diagnosis	ICD-10-CM
I63.00	Cerebral infarction due to thrombosis of unspecified precerebral artery	Diagnosis	ICD-10-CM
I63.011	Cerebral infarction due to thrombosis of right vertebral artery	Diagnosis	ICD-10-CM
I63.012	Cerebral infarction due to thrombosis of left vertebral artery	Diagnosis	ICD-10-CM
I63.013	Cerebral infarction due to thrombosis of bilateral vertebral arteries	Diagnosis	ICD-10-CM
I63.019	Cerebral infarction due to thrombosis of unspecified vertebral artery	Diagnosis	ICD-10-CM
I63.02	Cerebral infarction due to thrombosis of basilar artery	Diagnosis	ICD-10-CM
I63.031	Cerebral infarction due to thrombosis of right carotid artery	Diagnosis	ICD-10-CM
I63.032	Cerebral infarction due to thrombosis of left carotid artery	Diagnosis	ICD-10-CM
I63.033	Cerebral infarction due to thrombosis of bilateral carotid arteries	Diagnosis	ICD-10-CM
I63.039	Cerebral infarction due to thrombosis of unspecified carotid artery	Diagnosis	ICD-10-CM
I63.09	Cerebral infarction due to thrombosis of other precerebral artery	Diagnosis	ICD-10-CM

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

Code	Description	Code Category	Code Type
I63.10	Cerebral infarction due to embolism of unspecified precerebral artery	Diagnosis	ICD-10-CM
I63.111	Cerebral infarction due to embolism of right vertebral artery	Diagnosis	ICD-10-CM
I63.112	Cerebral infarction due to embolism of left vertebral artery	Diagnosis	ICD-10-CM
I63.113	Cerebral infarction due to embolism of bilateral vertebral arteries	Diagnosis	ICD-10-CM
I63.119	Cerebral infarction due to embolism of unspecified vertebral artery	Diagnosis	ICD-10-CM
I63.12	Cerebral infarction due to embolism of basilar artery	Diagnosis	ICD-10-CM
I63.131	Cerebral infarction due to embolism of right carotid artery	Diagnosis	ICD-10-CM
I63.132	Cerebral infarction due to embolism of left carotid artery	Diagnosis	ICD-10-CM
I63.133	Cerebral infarction due to embolism of bilateral carotid arteries	Diagnosis	ICD-10-CM
I63.139	Cerebral infarction due to embolism of unspecified carotid artery	Diagnosis	ICD-10-CM
I63.19	Cerebral infarction due to embolism of other precerebral artery	Diagnosis	ICD-10-CM
I63.20	Cerebral infarction due to unspecified occlusion or stenosis of unspecified precerebral arteries	Diagnosis	ICD-10-CM
I63.211	Cerebral infarction due to unspecified occlusion or stenosis of right vertebral artery	Diagnosis	ICD-10-CM
I63.212	Cerebral infarction due to unspecified occlusion or stenosis of left vertebral artery	Diagnosis	ICD-10-CM
I63.213	Cerebral infarction due to unspecified occlusion or stenosis of bilateral vertebral arteries	Diagnosis	ICD-10-CM
I63.219	Cerebral infarction due to unspecified occlusion or stenosis of unspecified vertebral artery	Diagnosis	ICD-10-CM
I63.22	Cerebral infarction due to unspecified occlusion or stenosis of basilar artery	Diagnosis	ICD-10-CM
I63.231	Cerebral infarction due to unspecified occlusion or stenosis of right carotid arteries	Diagnosis	ICD-10-CM
I63.232	Cerebral infarction due to unspecified occlusion or stenosis of left carotid arteries	Diagnosis	ICD-10-CM
I63.233	Cerebral infarction due to unspecified occlusion or stenosis of bilateral carotid arteries	Diagnosis	ICD-10-CM
I63.239	Cerebral infarction due to unspecified occlusion or stenosis of unspecified carotid artery	Diagnosis	ICD-10-CM
I63.29	Cerebral infarction due to unspecified occlusion or stenosis of other precerebral arteries	Diagnosis	ICD-10-CM
I63.30	Cerebral infarction due to thrombosis of unspecified cerebral artery	Diagnosis	ICD-10-CM
I63.311	Cerebral infarction due to thrombosis of right middle cerebral artery	Diagnosis	ICD-10-CM
I63.312	Cerebral infarction due to thrombosis of left middle cerebral artery	Diagnosis	ICD-10-CM
I63.313	Cerebral infarction due to thrombosis of bilateral middle cerebral arteries	Diagnosis	ICD-10-CM
I63.319	Cerebral infarction due to thrombosis of unspecified middle cerebral artery	Diagnosis	ICD-10-CM
I63.321	Cerebral infarction due to thrombosis of right anterior cerebral artery	Diagnosis	ICD-10-CM
I63.322	Cerebral infarction due to thrombosis of left anterior cerebral artery	Diagnosis	ICD-10-CM
I63.323	Cerebral infarction due to thrombosis of bilateral anterior cerebral arteries	Diagnosis	ICD-10-CM
I63.329	Cerebral infarction due to thrombosis of unspecified anterior cerebral artery	Diagnosis	ICD-10-CM
I63.331	Cerebral infarction due to thrombosis of right posterior cerebral artery	Diagnosis	ICD-10-CM
I63.332	Cerebral infarction due to thrombosis of left posterior cerebral artery	Diagnosis	ICD-10-CM

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

Code	Description	Code Category	Code Type
I63.333	Cerebral infarction due to thrombosis of bilateral posterior cerebral arteries	Diagnosis	ICD-10-CM
I63.339	Cerebral infarction due to thrombosis of unspecified posterior cerebral artery	Diagnosis	ICD-10-CM
I63.341	Cerebral infarction due to thrombosis of right cerebellar artery	Diagnosis	ICD-10-CM
I63.342	Cerebral infarction due to thrombosis of left cerebellar artery	Diagnosis	ICD-10-CM
I63.343	Cerebral infarction due to thrombosis of bilateral cerebellar arteries	Diagnosis	ICD-10-CM
I63.349	Cerebral infarction due to thrombosis of unspecified cerebellar artery	Diagnosis	ICD-10-CM
I63.39	Cerebral infarction due to thrombosis of other cerebral artery	Diagnosis	ICD-10-CM
I63.40	Cerebral infarction due to embolism of unspecified cerebral artery	Diagnosis	ICD-10-CM
I63.411	Cerebral infarction due to embolism of right middle cerebral artery	Diagnosis	ICD-10-CM
I63.412	Cerebral infarction due to embolism of left middle cerebral artery	Diagnosis	ICD-10-CM
I63.413	Cerebral infarction due to embolism of bilateral middle cerebral arteries	Diagnosis	ICD-10-CM
I63.419	Cerebral infarction due to embolism of unspecified middle cerebral artery	Diagnosis	ICD-10-CM
I63.421	Cerebral infarction due to embolism of right anterior cerebral artery	Diagnosis	ICD-10-CM
I63.422	Cerebral infarction due to embolism of left anterior cerebral artery	Diagnosis	ICD-10-CM
I63.423	Cerebral infarction due to embolism of bilateral anterior cerebral arteries	Diagnosis	ICD-10-CM
I63.429	Cerebral infarction due to embolism of unspecified anterior cerebral artery	Diagnosis	ICD-10-CM
I63.431	Cerebral infarction due to embolism of right posterior cerebral artery	Diagnosis	ICD-10-CM
I63.432	Cerebral infarction due to embolism of left posterior cerebral artery	Diagnosis	ICD-10-CM
I63.433	Cerebral infarction due to embolism of bilateral posterior cerebral arteries	Diagnosis	ICD-10-CM
I63.439	Cerebral infarction due to embolism of unspecified posterior cerebral artery	Diagnosis	ICD-10-CM
I63.441	Cerebral infarction due to embolism of right cerebellar artery	Diagnosis	ICD-10-CM
I63.442	Cerebral infarction due to embolism of left cerebellar artery	Diagnosis	ICD-10-CM
I63.443	Cerebral infarction due to embolism of bilateral cerebellar arteries	Diagnosis	ICD-10-CM
I63.449	Cerebral infarction due to embolism of unspecified cerebellar artery	Diagnosis	ICD-10-CM
I63.49	Cerebral infarction due to embolism of other cerebral artery	Diagnosis	ICD-10-CM
I63.50	Cerebral infarction due to unspecified occlusion or stenosis of unspecified cerebral artery	Diagnosis	ICD-10-CM
I63.511	Cerebral infarction due to unspecified occlusion or stenosis of right middle cerebral artery	Diagnosis	ICD-10-CM
I63.512	Cerebral infarction due to unspecified occlusion or stenosis of left middle cerebral artery	Diagnosis	ICD-10-CM
I63.513	Cerebral infarction due to unspecified occlusion or stenosis of bilateral middle cerebral arteries	Diagnosis	ICD-10-CM
I63.519	Cerebral infarction due to unspecified occlusion or stenosis of unspecified middle cerebral artery	Diagnosis	ICD-10-CM
I63.521	Cerebral infarction due to unspecified occlusion or stenosis of right anterior cerebral artery	Diagnosis	ICD-10-CM
I63.522	Cerebral infarction due to unspecified occlusion or stenosis of left anterior cerebral artery	Diagnosis	ICD-10-CM
I63.523	Cerebral infarction due to unspecified occlusion or stenosis of bilateral anterior cerebral arteries	Diagnosis	ICD-10-CM

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

Code	Description	Code Category	Code Type
I63.529	Cerebral infarction due to unspecified occlusion or stenosis of unspecified anterior cerebral artery	Diagnosis	ICD-10-CM
I63.531	Cerebral infarction due to unspecified occlusion or stenosis of right posterior cerebral artery	Diagnosis	ICD-10-CM
I63.532	Cerebral infarction due to unspecified occlusion or stenosis of left posterior cerebral artery	Diagnosis	ICD-10-CM
I63.533	Cerebral infarction due to unspecified occlusion or stenosis of bilateral posterior cerebral arteries	Diagnosis	ICD-10-CM
I63.539	Cerebral infarction due to unspecified occlusion or stenosis of unspecified posterior cerebral artery	Diagnosis	ICD-10-CM
I63.541	Cerebral infarction due to unspecified occlusion or stenosis of right cerebellar artery	Diagnosis	ICD-10-CM
I63.542	Cerebral infarction due to unspecified occlusion or stenosis of left cerebellar artery	Diagnosis	ICD-10-CM
I63.543	Cerebral infarction due to unspecified occlusion or stenosis of bilateral cerebellar arteries	Diagnosis	ICD-10-CM
I63.549	Cerebral infarction due to unspecified occlusion or stenosis of unspecified cerebellar artery	Diagnosis	ICD-10-CM
I63.59	Cerebral infarction due to unspecified occlusion or stenosis of other cerebral artery	Diagnosis	ICD-10-CM
I63.6	Cerebral infarction due to cerebral venous thrombosis, nonpyogenic	Diagnosis	ICD-10-CM
I63.8	Other cerebral infarction	Diagnosis	ICD-10-CM
I63.81	Other cerebral infarction due to occlusion or stenosis of small artery	Diagnosis	ICD-10-CM
I63.89	Other cerebral infarction	Diagnosis	ICD-10-CM
I63.9	Cerebral infarction, unspecified	Diagnosis	ICD-10-CM
I66.01	Occlusion and stenosis of right middle cerebral artery	Diagnosis	ICD-10-CM
I66.02	Occlusion and stenosis of left middle cerebral artery	Diagnosis	ICD-10-CM
I66.03	Occlusion and stenosis of bilateral middle cerebral arteries	Diagnosis	ICD-10-CM
I66.09	Occlusion and stenosis of unspecified middle cerebral artery	Diagnosis	ICD-10-CM
I66.11	Occlusion and stenosis of right anterior cerebral artery	Diagnosis	ICD-10-CM
I66.12	Occlusion and stenosis of left anterior cerebral artery	Diagnosis	ICD-10-CM
I66.13	Occlusion and stenosis of bilateral anterior cerebral arteries	Diagnosis	ICD-10-CM
I66.19	Occlusion and stenosis of unspecified anterior cerebral artery	Diagnosis	ICD-10-CM
I66.21	Occlusion and stenosis of right posterior cerebral artery	Diagnosis	ICD-10-CM
I66.22	Occlusion and stenosis of left posterior cerebral artery	Diagnosis	ICD-10-CM
I66.23	Occlusion and stenosis of bilateral posterior cerebral arteries	Diagnosis	ICD-10-CM
I66.29	Occlusion and stenosis of unspecified posterior cerebral artery	Diagnosis	ICD-10-CM
I66.3	Occlusion and stenosis of cerebellar arteries	Diagnosis	ICD-10-CM
I66.8	Occlusion and stenosis of other cerebral arteries	Diagnosis	ICD-10-CM
I66.9	Occlusion and stenosis of unspecified cerebral artery	Diagnosis	ICD-10-CM
I67.841	Reversible cerebrovascular vasoconstriction syndrome	Diagnosis	ICD-10-CM
I67.848	Other cerebrovascular vasospasm and vasoconstriction	Diagnosis	ICD-10-CM
I67.89	Other cerebrovascular disease	Diagnosis	ICD-10-CM

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

Code	Description	Code Category	Code Type
I97.810	Intraoperative cerebrovascular infarction during cardiac surgery	Diagnosis	ICD-10-CM
I97.811	Intraoperative cerebrovascular infarction during other surgery	Diagnosis	ICD-10-CM
I97.820	Postprocedural cerebrovascular infarction following cardiac surgery	Diagnosis	ICD-10-CM
I97.821	Postprocedural cerebrovascular infarction following other surgery	Diagnosis	ICD-10-CM
Peripheral Vascular Disease			
440.0	Atherosclerosis of aorta	Diagnosis	ICD-9-CM
440.1	Atherosclerosis of renal artery	Diagnosis	ICD-9-CM
440.2	Atherosclerosis of native arteries of the extremities	Diagnosis	ICD-9-CM
440.20	Atherosclerosis of native arteries of the extremities, unspecified	Diagnosis	ICD-9-CM
440.21	Atherosclerosis of native arteries of the extremities with intermittent claudication	Diagnosis	ICD-9-CM
440.22	Atherosclerosis of native arteries of the extremities with rest pain	Diagnosis	ICD-9-CM
440.23	Atherosclerosis of native arteries of the extremities with ulceration	Diagnosis	ICD-9-CM
440.29	Other atherosclerosis of native arteries of the extremities	Diagnosis	ICD-9-CM
440.4	Chronic total occlusion of artery of the extremities	Diagnosis	ICD-9-CM
443.8	Other specified peripheral vascular diseases	Diagnosis	ICD-9-CM
443.81	Peripheral angiopathy in diseases classified elsewhere	Diagnosis	ICD-9-CM
443.82	Erythromelalgia	Diagnosis	ICD-9-CM
443.89	Other peripheral vascular disease	Diagnosis	ICD-9-CM
443.9	Unspecified peripheral vascular disease	Diagnosis	ICD-9-CM
E08.51	Diabetes mellitus due to underlying condition with diabetic peripheral angiopathy without gangrene	Diagnosis	ICD-10-CM
E08.52	Diabetes mellitus due to underlying condition with diabetic peripheral angiopathy with gangrene	Diagnosis	ICD-10-CM
E09.51	Drug or chemical induced diabetes mellitus with diabetic peripheral angiopathy without gangrene	Diagnosis	ICD-10-CM
E09.52	Drug or chemical induced diabetes mellitus with diabetic peripheral angiopathy with gangrene	Diagnosis	ICD-10-CM
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
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
E13.51	Other specified diabetes mellitus with diabetic peripheral angiopathy without gangrene	Diagnosis	ICD-10-CM
E13.52	Other specified diabetes mellitus with diabetic peripheral angiopathy with gangrene	Diagnosis	ICD-10-CM
I70.0	Atherosclerosis of aorta	Diagnosis	ICD-10-CM
I70.1	Atherosclerosis of renal artery	Diagnosis	ICD-10-CM
I70.201	Unspecified atherosclerosis of native arteries of extremities, right leg	Diagnosis	ICD-10-CM
I70.202	Unspecified atherosclerosis of native arteries of extremities, left leg	Diagnosis	ICD-10-CM

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

Code	Description	Code Category	Code Type
I70.203	Unspecified atherosclerosis of native arteries of extremities, bilateral legs	Diagnosis	ICD-10-CM
I70.208	Unspecified atherosclerosis of native arteries of extremities, other extremity	Diagnosis	ICD-10-CM
I70.209	Unspecified atherosclerosis of native arteries of extremities, unspecified extremity	Diagnosis	ICD-10-CM
I70.211	Atherosclerosis of native arteries of extremities with intermittent claudication, right leg	Diagnosis	ICD-10-CM
I70.212	Atherosclerosis of native arteries of extremities with intermittent claudication, left leg	Diagnosis	ICD-10-CM
I70.213	Atherosclerosis of native arteries of extremities with intermittent claudication, bilateral legs	Diagnosis	ICD-10-CM
I70.218	Atherosclerosis of native arteries of extremities with intermittent claudication, other extremity	Diagnosis	ICD-10-CM
I70.219	Atherosclerosis of native arteries of extremities with intermittent claudication, unspecified extremity	Diagnosis	ICD-10-CM
I70.221	Atherosclerosis of native arteries of extremities with rest pain, right leg	Diagnosis	ICD-10-CM
I70.222	Atherosclerosis of native arteries of extremities with rest pain, left leg	Diagnosis	ICD-10-CM
I70.223	Atherosclerosis of native arteries of extremities with rest pain, bilateral legs	Diagnosis	ICD-10-CM
I70.228	Atherosclerosis of native arteries of extremities with rest pain, other extremity	Diagnosis	ICD-10-CM
I70.229	Atherosclerosis of native arteries of extremities with rest pain, unspecified extremity	Diagnosis	ICD-10-CM
I70.231	Atherosclerosis of native arteries of right leg with ulceration of thigh	Diagnosis	ICD-10-CM
I70.232	Atherosclerosis of native arteries of right leg with ulceration of calf	Diagnosis	ICD-10-CM
I70.233	Atherosclerosis of native arteries of right leg with ulceration of ankle	Diagnosis	ICD-10-CM
I70.234	Atherosclerosis of native arteries of right leg with ulceration of heel and midfoot	Diagnosis	ICD-10-CM
I70.235	Atherosclerosis of native arteries of right leg with ulceration of other part of foot	Diagnosis	ICD-10-CM
I70.238	Atherosclerosis of native arteries of right leg with ulceration of other part of lower leg	Diagnosis	ICD-10-CM
I70.239	Atherosclerosis of native arteries of right leg with ulceration of unspecified site	Diagnosis	ICD-10-CM
I70.241	Atherosclerosis of native arteries of left leg with ulceration of thigh	Diagnosis	ICD-10-CM
I70.242	Atherosclerosis of native arteries of left leg with ulceration of calf	Diagnosis	ICD-10-CM
I70.243	Atherosclerosis of native arteries of left leg with ulceration of ankle	Diagnosis	ICD-10-CM
I70.244	Atherosclerosis of native arteries of left leg with ulceration of heel and midfoot	Diagnosis	ICD-10-CM
I70.245	Atherosclerosis of native arteries of left leg with ulceration of other part of foot	Diagnosis	ICD-10-CM
I70.248	Atherosclerosis of native arteries of left leg with ulceration of other part of lower leg	Diagnosis	ICD-10-CM
I70.249	Atherosclerosis of native arteries of left leg with ulceration of unspecified site	Diagnosis	ICD-10-CM
I70.25	Atherosclerosis of native arteries of other extremities with ulceration	Diagnosis	ICD-10-CM
I70.291	Other atherosclerosis of native arteries of extremities, right leg	Diagnosis	ICD-10-CM
I70.292	Other atherosclerosis of native arteries of extremities, left leg	Diagnosis	ICD-10-CM
I70.293	Other atherosclerosis of native arteries of extremities, bilateral legs	Diagnosis	ICD-10-CM
I70.298	Other atherosclerosis of native arteries of extremities, other extremity	Diagnosis	ICD-10-CM
I70.299	Other atherosclerosis of native arteries of extremities, unspecified extremity	Diagnosis	ICD-10-CM

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

Code	Description	Code Category	Code Type
I70.92	Chronic total occlusion of artery of the extremities	Diagnosis	ICD-10-CM
I73.81	Erythromelalgia	Diagnosis	ICD-10-CM
I73.89	Other specified peripheral vascular diseases	Diagnosis	ICD-10-CM
I73.9	Peripheral vascular disease, unspecified	Diagnosis	ICD-10-CM
I79.1	Aortitis in diseases classified elsewhere	Diagnosis	ICD-10-CM
I79.8	Other disorders of arteries, arterioles and capillaries in diseases classified elsewhere	Diagnosis	ICD-10-CM
Heart Failure			
398.91	Rheumatic heart failure (congestive)	Diagnosis	ICD-9-CM
402.01	Malignant hypertensive heart disease with heart failure	Diagnosis	ICD-9-CM
402.11	Benign hypertensive heart disease with heart failure	Diagnosis	ICD-9-CM
402.91	Hypertensive heart disease, unspecified, with heart failure	Diagnosis	ICD-9-CM
404.01	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	Diagnosis	ICD-9-CM
404.03	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage V or end stage renal disease	Diagnosis	ICD-9-CM
404.11	Hypertensive heart and chronic kidney disease, benign, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	Diagnosis	ICD-9-CM
404.13	Hypertensive heart and chronic kidney disease, benign, with heart failure and chronic kidney disease stage V or end stage renal disease	Diagnosis	ICD-9-CM
404.91	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	Diagnosis	ICD-9-CM
404.93	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and chronic kidney disease stage V or end stage renal disease	Diagnosis	ICD-9-CM
428.0	Congestive heart failure, unspecified	Diagnosis	ICD-9-CM
428.1	Left heart failure	Diagnosis	ICD-9-CM
428.20	Unspecified systolic heart failure	Diagnosis	ICD-9-CM
428.21	Acute systolic heart failure	Diagnosis	ICD-9-CM
428.22	Chronic systolic heart failure	Diagnosis	ICD-9-CM
428.23	Acute on chronic systolic heart failure	Diagnosis	ICD-9-CM
428.30	Unspecified diastolic heart failure	Diagnosis	ICD-9-CM
428.31	Acute diastolic heart failure	Diagnosis	ICD-9-CM
428.32	Chronic diastolic heart failure	Diagnosis	ICD-9-CM
428.33	Acute on chronic diastolic heart failure	Diagnosis	ICD-9-CM

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

Code	Description	Code Category	Code Type
428.40	Unspecified combined systolic and diastolic heart failure	Diagnosis	ICD-9-CM
428.41	Acute combined systolic and diastolic heart failure	Diagnosis	ICD-9-CM
428.42	Chronic combined systolic and diastolic heart failure	Diagnosis	ICD-9-CM
428.43	Acute on chronic combined systolic and diastolic heart failure	Diagnosis	ICD-9-CM
428.9	Unspecified heart failure	Diagnosis	ICD-9-CM
I09.81	Rheumatic heart failure	Diagnosis	ICD-10-CM
I11.0	Hypertensive heart disease with heart failure	Diagnosis	ICD-10-CM
I13.0	Hypertensive heart and chronic kidney disease with heart failure and stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	Diagnosis	ICD-10-CM
I13.2	Hypertensive heart and chronic kidney disease with heart failure and with stage 5 chronic kidney disease, or end stage renal disease	Diagnosis	ICD-10-CM
I42.0	Dilated cardiomyopathy	Diagnosis	ICD-10-CM
I42.5	Other restrictive cardiomyopathy	Diagnosis	ICD-10-CM
I42.6	Alcoholic cardiomyopathy	Diagnosis	ICD-10-CM
I42.7	Cardiomyopathy due to drug and external agent	Diagnosis	ICD-10-CM
I42.8	Other cardiomyopathies	Diagnosis	ICD-10-CM
I43	Cardiomyopathy in diseases classified elsewhere	Diagnosis	ICD-10-CM
I50.1	Left ventricular failure, unspecified	Diagnosis	ICD-10-CM
I50.2	Systolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.20	Unspecified systolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.21	Acute systolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.22	Chronic systolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.23	Acute on chronic systolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.3	Diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.30	Unspecified diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.31	Acute diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.32	Chronic diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.33	Acute on chronic diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.40	Unspecified combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.41	Acute combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.42	Chronic combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.43	Acute on chronic combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50.810	Right heart failure, unspecified	Diagnosis	ICD-10-CM

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

Code	Description	Code Category	Code Type
I50.811	Acute right heart failure	Diagnosis	ICD-10-CM
I50.812	Chronic right heart failure	Diagnosis	ICD-10-CM
I50.813	Acute on chronic right heart failure	Diagnosis	ICD-10-CM
I50.814	Right heart failure due to left heart failure	Diagnosis	ICD-10-CM
I50.82	Biventricular heart failure	Diagnosis	ICD-10-CM
I50.83	High output heart failure	Diagnosis	ICD-10-CM
I50.84	End stage heart failure	Diagnosis	ICD-10-CM
I50.89	Other heart failure	Diagnosis	ICD-10-CM
I50.9	Heart failure, unspecified	Diagnosis	ICD-10-CM
P29.0	Neonatal cardiac failure	Diagnosis	ICD-10-CM
Obstructive Sleep Apnea			
327.23	Obstructive sleep apnea (adult) (pediatric)	Diagnosis	ICD-9-CM
G47.33	Obstructive sleep apnea (adult) (pediatric)	Diagnosis	ICD-10-CM
Chronic Kidney Disease			
016.00	Tuberculosis of kidney, confirmation unspecified	Diagnosis	ICD-9-CM
016.01	Tuberculosis of kidney, bacteriological or histological examination not done	Diagnosis	ICD-9-CM
016.02	Tuberculosis of kidney, bacteriological or histological examination unknown (at present)	Diagnosis	ICD-9-CM
016.03	Tuberculosis of kidney, tubercle bacilli found (in sputum) by microscopy	Diagnosis	ICD-9-CM
016.04	Tuberculosis of kidney, tubercle bacilli not found (in sputum) by microscopy, but found by bacterial culture	Diagnosis	ICD-9-CM
016.05	Tuberculosis of kidney, tubercle bacilli not found by bacteriological examination, but tuberculosis confirmed histologically	Diagnosis	ICD-9-CM
016.06	Tuberculosis of kidney, tubercle bacilli not found by bacteriological or histological examination, but tuberculosis confirmed by other methods [inoculation of animals]	Diagnosis	ICD-9-CM
095.4	Syphilis of kidney	Diagnosis	ICD-9-CM
189.0	Malignant neoplasm of kidney, except pelvis	Diagnosis	ICD-9-CM
189.9	Malignant neoplasm of urinary organ, site unspecified	Diagnosis	ICD-9-CM
223.0	Benign neoplasm of kidney, except pelvis	Diagnosis	ICD-9-CM
236.91	Neoplasm of uncertain behavior of kidney and ureter	Diagnosis	ICD-9-CM
249.40	Secondary diabetes mellitus with renal manifestations, not stated as uncontrolled, or unspecified	Diagnosis	ICD-9-CM
249.41	Secondary diabetes mellitus with renal manifestations, uncontrolled	Diagnosis	ICD-9-CM
250.40	Diabetes with renal manifestations, type II or unspecified type, not stated as uncontrolled	Diagnosis	ICD-9-CM
250.41	Diabetes with renal manifestations, type I [juvenile type], not stated as uncontrolled	Diagnosis	ICD-9-CM

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

Code	Description	Code Category	Code Type
250.42	Diabetes with renal manifestations, type II or unspecified type, uncontrolled	Diagnosis	ICD-9-CM
250.43	Diabetes with renal manifestations, type I [juvenile type], uncontrolled	Diagnosis	ICD-9-CM
271.4	Renal glycosuria	Diagnosis	ICD-9-CM
274.10	Gouty nephropathy, unspecified	Diagnosis	ICD-9-CM
283.11	Hemolytic-uremic syndrome	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
403.11	Hypertensive chronic kidney disease, benign, with chronic kidney disease stage V or end stage renal disease	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
404.02	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
404.12	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
404.92	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
440.1	Atherosclerosis of renal artery	Diagnosis	ICD-9-CM
442.1	Aneurysm of renal artery	Diagnosis	ICD-9-CM
572.4	Hepatorenal syndrome	Diagnosis	ICD-9-CM
580.0	Acute glomerulonephritis with lesion of proliferative glomerulonephritis	Diagnosis	ICD-9-CM
580.4	Acute glomerulonephritis with lesion of rapidly progressive glomerulonephritis	Diagnosis	ICD-9-CM
580.81	Acute glomerulonephritis with other specified pathological lesion in kidney in disease classified elsewhere	Diagnosis	ICD-9-CM
580.89	Other acute glomerulonephritis with other specified pathological lesion in kidney	Diagnosis	ICD-9-CM
580.9	Acute glomerulonephritis with unspecified pathological lesion in kidney	Diagnosis	ICD-9-CM
581.0	Nephrotic syndrome with lesion of proliferative glomerulonephritis	Diagnosis	ICD-9-CM

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

Code	Description	Code Category	Code Type
581.1	Nephrotic syndrome with lesion of membranous glomerulonephritis	Diagnosis	ICD-9-CM
581.2	Nephrotic syndrome with lesion of membranoproliferative glomerulonephritis	Diagnosis	ICD-9-CM
581.3	Nephrotic syndrome with lesion of minimal change glomerulonephritis	Diagnosis	ICD-9-CM
581.81	Nephrotic syndrome with other specified pathological lesion in kidney in diseases classified elsewhere	Diagnosis	ICD-9-CM
581.89	Other nephrotic syndrome with specified pathological lesion in kidney	Diagnosis	ICD-9-CM
581.9	Nephrotic syndrome with unspecified pathological lesion in kidney	Diagnosis	ICD-9-CM
582.0	Chronic glomerulonephritis with lesion of proliferative glomerulonephritis	Diagnosis	ICD-9-CM
582.1	Chronic glomerulonephritis with lesion of membranous glomerulonephritis	Diagnosis	ICD-9-CM
582.2	Chronic glomerulonephritis with lesion of membranoproliferative glomerulonephritis	Diagnosis	ICD-9-CM
582.4	Chronic glomerulonephritis with lesion of rapidly progressive glomerulonephritis	Diagnosis	ICD-9-CM
582.81	Chronic glomerulonephritis with other specified pathological lesion in kidney in diseases classified elsewhere	Diagnosis	ICD-9-CM
582.89	Other chronic glomerulonephritis with specified pathological lesion in kidney	Diagnosis	ICD-9-CM
582.9	Chronic glomerulonephritis with unspecified pathological lesion in kidney	Diagnosis	ICD-9-CM
583.0	Nephritis and nephropathy, not specified as acute or chronic, with lesion of proliferative glomerulonephritis	Diagnosis	ICD-9-CM
583.1	Nephritis and nephropathy, not specified as acute or chronic, with lesion of membranous glomerulonephritis	Diagnosis	ICD-9-CM
583.2	Nephritis and nephropathy, not specified as acute or chronic, with lesion of membranoproliferative glomerulonephritis	Diagnosis	ICD-9-CM
583.4	Nephritis and nephropathy, not specified as acute or chronic, with lesion of rapidly progressive glomerulonephritis	Diagnosis	ICD-9-CM
583.6	Nephritis and nephropathy, not specified as acute or chronic, with lesion of renal cortical necrosis	Diagnosis	ICD-9-CM
583.7	Nephritis and nephropathy, not specified as acute or chronic, with lesion of renal medullary necrosis	Diagnosis	ICD-9-CM
583.81	Nephritis and nephropathy, not specified as acute or chronic, with other specified pathological lesion in kidney, in diseases classified elsewhere	Diagnosis	ICD-9-CM
583.89	Other nephritis and nephropathy, not specified as acute or chronic, with specified pathological lesion in kidney	Diagnosis	ICD-9-CM
583.9	Nephritis and nephropathy, not specified as acute or chronic, with unspecified pathological lesion in kidney	Diagnosis	ICD-9-CM
584.5	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

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

Code	Description	Code Category	Code Type
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
585.6	End stage renal disease	Diagnosis	ICD-9-CM
585.9	Chronic kidney disease, unspecified	Diagnosis	ICD-9-CM
586	Unspecified renal failure	Diagnosis	ICD-9-CM
587	Unspecified renal sclerosis	Diagnosis	ICD-9-CM
588.0	Renal osteodystrophy	Diagnosis	ICD-9-CM
588.1	Nephrogenic diabetes insipidus	Diagnosis	ICD-9-CM
588.81	Secondary hyperparathyroidism (of renal origin)	Diagnosis	ICD-9-CM
588.89	Other specified disorders resulting from impaired renal function	Diagnosis	ICD-9-CM
588.9	Unspecified disorder resulting from impaired renal function	Diagnosis	ICD-9-CM
591	Hydronephrosis	Diagnosis	ICD-9-CM
753.12	Congenital polycystic kidney, unspecified type	Diagnosis	ICD-9-CM
753.13	Congenital polycystic kidney, autosomal dominant	Diagnosis	ICD-9-CM
753.14	Congenital polycystic kidney, autosomal recessive	Diagnosis	ICD-9-CM
753.15	Congenital renal dysplasia	Diagnosis	ICD-9-CM
753.16	Congenital medullary cystic kidney	Diagnosis	ICD-9-CM
753.17	Congenital medullary sponge kidney	Diagnosis	ICD-9-CM
753.19	Other specified congenital cystic kidney disease	Diagnosis	ICD-9-CM
753.20	Unspecified obstructive defect of renal pelvis and ureter	Diagnosis	ICD-9-CM
753.21	Congenital obstruction of ureteropelvic junction	Diagnosis	ICD-9-CM
753.22	Congenital obstruction of ureterovesical junction	Diagnosis	ICD-9-CM
753.23	Congenital ureterocele	Diagnosis	ICD-9-CM
753.29	Other obstructive defect of renal pelvis and ureter	Diagnosis	ICD-9-CM
794.4	Nonspecific abnormal results of kidney function study	Diagnosis	ICD-9-CM
A18.11	Tuberculosis of kidney and ureter	Diagnosis	ICD-10-CM
A52.75	Syphilis of kidney and ureter	Diagnosis	ICD-10-CM
B52.0	Plasmodium malariae malaria with nephropathy	Diagnosis	ICD-10-CM

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

Code	Description	Code Category	Code Type
C64.1	Malignant neoplasm of right kidney, except renal pelvis	Diagnosis	ICD-10-CM
C64.2	Malignant neoplasm of left kidney, except renal pelvis	Diagnosis	ICD-10-CM
C64.9	Malignant neoplasm of unspecified kidney, except renal pelvis	Diagnosis	ICD-10-CM
C68.9	Malignant neoplasm of urinary organ, unspecified	Diagnosis	ICD-10-CM
D30.00	Benign neoplasm of unspecified kidney	Diagnosis	ICD-10-CM
D30.01	Benign neoplasm of right kidney	Diagnosis	ICD-10-CM
D30.02	Benign neoplasm of left kidney	Diagnosis	ICD-10-CM
D41.00	Neoplasm of uncertain behavior of unspecified kidney	Diagnosis	ICD-10-CM
D41.01	Neoplasm of uncertain behavior of right kidney	Diagnosis	ICD-10-CM
D41.02	Neoplasm of uncertain behavior of left kidney	Diagnosis	ICD-10-CM
D41.10	Neoplasm of uncertain behavior of unspecified renal pelvis	Diagnosis	ICD-10-CM
D41.11	Neoplasm of uncertain behavior of right renal pelvis	Diagnosis	ICD-10-CM
D41.12	Neoplasm of uncertain behavior of left renal pelvis	Diagnosis	ICD-10-CM
D41.20	Neoplasm of uncertain behavior of unspecified ureter	Diagnosis	ICD-10-CM
D41.21	Neoplasm of uncertain behavior of right ureter	Diagnosis	ICD-10-CM
D41.22	Neoplasm of uncertain behavior of left ureter	Diagnosis	ICD-10-CM
D59.3	Hemolytic-uremic syndrome	Diagnosis	ICD-10-CM
E08.21	Diabetes mellitus due to underlying condition with diabetic nephropathy	Diagnosis	ICD-10-CM
E08.22	Diabetes mellitus due to underlying condition with diabetic chronic kidney disease	Diagnosis	ICD-10-CM
E08.29	Diabetes mellitus due to underlying condition with other diabetic kidney complication	Diagnosis	ICD-10-CM
E08.65	Diabetes mellitus due to underlying condition with hyperglycemia	Diagnosis	ICD-10-CM
E09.21	Drug or chemical induced diabetes mellitus with diabetic nephropathy	Diagnosis	ICD-10-CM
E09.22	Drug or chemical induced diabetes mellitus with diabetic chronic kidney disease	Diagnosis	ICD-10-CM
E09.29	Drug or chemical induced diabetes mellitus with other diabetic kidney complication	Diagnosis	ICD-10-CM
E10.21	Type 1 diabetes mellitus with diabetic nephropathy	Diagnosis	ICD-10-CM
E10.22	Type 1 diabetes mellitus with diabetic chronic kidney disease	Diagnosis	ICD-10-CM
E10.29	Type 1 diabetes mellitus with other diabetic kidney complication	Diagnosis	ICD-10-CM
E10.65	Type 1 diabetes mellitus with hyperglycemia	Diagnosis	ICD-10-CM
E11.21	Type 2 diabetes mellitus with diabetic nephropathy	Diagnosis	ICD-10-CM
E11.22	Type 2 diabetes mellitus with diabetic chronic kidney disease	Diagnosis	ICD-10-CM
E11.29	Type 2 diabetes mellitus with other diabetic kidney complication	Diagnosis	ICD-10-CM
E11.65	Type 2 diabetes mellitus with hyperglycemia	Diagnosis	ICD-10-CM
E13.21	Other specified diabetes mellitus with diabetic nephropathy	Diagnosis	ICD-10-CM

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

Code	Description	Code Category	Code Type
E13.22	Other specified diabetes mellitus with diabetic chronic kidney disease	Diagnosis	ICD-10-CM
E13.29	Other specified diabetes mellitus with other diabetic kidney complication	Diagnosis	ICD-10-CM
E74.8	Other specified disorders of carbohydrate metabolism	Diagnosis	ICD-10-CM
I12.0	Hypertensive chronic kidney disease with stage 5 chronic kidney disease or end stage renal disease	Diagnosis	ICD-10-CM
I12.9	Hypertensive chronic kidney disease with stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	Diagnosis	ICD-10-CM
I13.0	Hypertensive heart and chronic kidney disease with heart failure and stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	Diagnosis	ICD-10-CM
I13.1	Hypertensive heart and chronic kidney disease without heart failure	Diagnosis	ICD-10-CM
I13.10	Hypertensive heart and chronic kidney disease without heart failure, with stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	Diagnosis	ICD-10-CM
I13.11	Hypertensive heart and chronic kidney disease without heart failure, with stage 5 chronic kidney disease, or end stage renal disease	Diagnosis	ICD-10-CM
I13.2	Hypertensive heart and chronic kidney disease with heart failure and with stage 5 chronic kidney disease, or end stage renal disease	Diagnosis	ICD-10-CM
I70.1	Atherosclerosis of renal artery	Diagnosis	ICD-10-CM
I72.2	Aneurysm of renal artery	Diagnosis	ICD-10-CM
K76.7	Hepatorenal syndrome	Diagnosis	ICD-10-CM
M10.30	Gout due to renal impairment, unspecified site	Diagnosis	ICD-10-CM
M10.311	Gout due to renal impairment, right shoulder	Diagnosis	ICD-10-CM
M10.312	Gout due to renal impairment, left shoulder	Diagnosis	ICD-10-CM
M10.319	Gout due to renal impairment, unspecified shoulder	Diagnosis	ICD-10-CM
M10.321	Gout due to renal impairment, right elbow	Diagnosis	ICD-10-CM
M10.322	Gout due to renal impairment, left elbow	Diagnosis	ICD-10-CM
M10.329	Gout due to renal impairment, unspecified elbow	Diagnosis	ICD-10-CM
M10.331	Gout due to renal impairment, right wrist	Diagnosis	ICD-10-CM
M10.332	Gout due to renal impairment, left wrist	Diagnosis	ICD-10-CM
M10.339	Gout due to renal impairment, unspecified wrist	Diagnosis	ICD-10-CM
M10.341	Gout due to renal impairment, right hand	Diagnosis	ICD-10-CM
M10.342	Gout due to renal impairment, left hand	Diagnosis	ICD-10-CM
M10.349	Gout due to renal impairment, unspecified hand	Diagnosis	ICD-10-CM
M10.351	Gout due to renal impairment, right hip	Diagnosis	ICD-10-CM
M10.352	Gout due to renal impairment, left hip	Diagnosis	ICD-10-CM

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

Code	Description	Code Category	Code Type
M10.359	Gout due to renal impairment, unspecified hip	Diagnosis	ICD-10-CM
M10.361	Gout due to renal impairment, right knee	Diagnosis	ICD-10-CM
M10.362	Gout due to renal impairment, left knee	Diagnosis	ICD-10-CM
M10.369	Gout due to renal impairment, unspecified knee	Diagnosis	ICD-10-CM
M10.371	Gout due to renal impairment, right ankle and foot	Diagnosis	ICD-10-CM
M10.372	Gout due to renal impairment, left ankle and foot	Diagnosis	ICD-10-CM
M10.379	Gout due to renal impairment, unspecified ankle and foot	Diagnosis	ICD-10-CM
M10.38	Gout due to renal impairment, vertebrae	Diagnosis	ICD-10-CM
M10.39	Gout due to renal impairment, multiple sites	Diagnosis	ICD-10-CM
M32.14	Glomerular disease in systemic lupus erythematosus	Diagnosis	ICD-10-CM
M32.15	Tubulo-interstitial nephropathy in systemic lupus erythematosus	Diagnosis	ICD-10-CM
M35.04	Sjogren syndrome with tubulo-interstitial nephropathy	Diagnosis	ICD-10-CM
M35.0A	Sjogren syndrome with glomerular disease	Diagnosis	ICD-10-CM
N00.0	Acute nephritic syndrome with minor glomerular abnormality	Diagnosis	ICD-10-CM
N00.1	Acute nephritic syndrome with focal and segmental glomerular lesions	Diagnosis	ICD-10-CM
N00.2	Acute nephritic syndrome with diffuse membranous glomerulonephritis	Diagnosis	ICD-10-CM
N00.3	Acute nephritic syndrome with diffuse mesangial proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N00.4	Acute nephritic syndrome with diffuse endocapillary proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N00.5	Acute nephritic syndrome with diffuse mesangiocapillary glomerulonephritis	Diagnosis	ICD-10-CM
N00.6	Acute nephritic syndrome with dense deposit disease	Diagnosis	ICD-10-CM
N00.7	Acute nephritic syndrome with diffuse crescentic glomerulonephritis	Diagnosis	ICD-10-CM
N00.8	Acute nephritic syndrome with other morphologic changes	Diagnosis	ICD-10-CM
N00.9	Acute nephritic syndrome with unspecified morphologic changes	Diagnosis	ICD-10-CM
N00.A	Acute nephritic syndrome with C3 glomerulonephritis	Diagnosis	ICD-10-CM
N01.0	Rapidly progressive nephritic syndrome with minor glomerular abnormality	Diagnosis	ICD-10-CM
N01.1	Rapidly progressive nephritic syndrome with focal and segmental glomerular lesions	Diagnosis	ICD-10-CM
N01.2	Rapidly progressive nephritic syndrome with diffuse membranous glomerulonephritis	Diagnosis	ICD-10-CM
N01.3	Rapidly progressive nephritic syndrome with diffuse mesangial proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N01.4	Rapidly progressive nephritic syndrome with diffuse endocapillary proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N01.5	Rapidly progressive nephritic syndrome with diffuse mesangiocapillary glomerulonephritis	Diagnosis	ICD-10-CM
N01.6	Rapidly progressive nephritic syndrome with dense deposit disease	Diagnosis	ICD-10-CM
N01.7	Rapidly progressive nephritic syndrome with diffuse crescentic glomerulonephritis	Diagnosis	ICD-10-CM
N01.8	Rapidly progressive nephritic syndrome with other morphologic changes	Diagnosis	ICD-10-CM

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

Code	Description	Code Category	Code Type
N01.9	Rapidly progressive nephritic syndrome with unspecified morphologic changes	Diagnosis	ICD-10-CM
N01.A	Rapidly progressive nephritic syndrome with C3 glomerulonephritis	Diagnosis	ICD-10-CM
N02.0	Recurrent and persistent hematuria with minor glomerular abnormality	Diagnosis	ICD-10-CM
N02.1	Recurrent and persistent hematuria with focal and segmental glomerular lesions	Diagnosis	ICD-10-CM
N02.2	Recurrent and persistent hematuria with diffuse membranous glomerulonephritis	Diagnosis	ICD-10-CM
N02.3	Recurrent and persistent hematuria with diffuse mesangial proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N02.4	Recurrent and persistent hematuria with diffuse endocapillary proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N02.5	Recurrent and persistent hematuria with diffuse mesangiocapillary glomerulonephritis	Diagnosis	ICD-10-CM
N02.6	Recurrent and persistent hematuria with dense deposit disease	Diagnosis	ICD-10-CM
N02.7	Recurrent and persistent hematuria with diffuse crescentic glomerulonephritis	Diagnosis	ICD-10-CM
N02.8	Recurrent and persistent hematuria with other morphologic changes	Diagnosis	ICD-10-CM
N02.9	Recurrent and persistent hematuria with unspecified morphologic changes	Diagnosis	ICD-10-CM
N02.A	Recurrent and persistent hematuria with C3 glomerulonephritis	Diagnosis	ICD-10-CM
N03.0	Chronic nephritic syndrome with minor glomerular abnormality	Diagnosis	ICD-10-CM
N03.1	Chronic nephritic syndrome with focal and segmental glomerular lesions	Diagnosis	ICD-10-CM
N03.2	Chronic nephritic syndrome with diffuse membranous glomerulonephritis	Diagnosis	ICD-10-CM
N03.3	Chronic nephritic syndrome with diffuse mesangial proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N03.4	Chronic nephritic syndrome with diffuse endocapillary proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N03.5	Chronic nephritic syndrome with diffuse mesangiocapillary glomerulonephritis	Diagnosis	ICD-10-CM
N03.6	Chronic nephritic syndrome with dense deposit disease	Diagnosis	ICD-10-CM
N03.7	Chronic nephritic syndrome with diffuse crescentic glomerulonephritis	Diagnosis	ICD-10-CM
N03.8	Chronic nephritic syndrome with other morphologic changes	Diagnosis	ICD-10-CM
N03.9	Chronic nephritic syndrome with unspecified morphologic changes	Diagnosis	ICD-10-CM
N03.A	Chronic nephritic syndrome with C3 glomerulonephritis	Diagnosis	ICD-10-CM
N04.0	Nephrotic syndrome with minor glomerular abnormality	Diagnosis	ICD-10-CM
N04.1	Nephrotic syndrome with focal and segmental glomerular lesions	Diagnosis	ICD-10-CM
N04.2	Nephrotic syndrome with diffuse membranous glomerulonephritis	Diagnosis	ICD-10-CM
N04.3	Nephrotic syndrome with diffuse mesangial proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N04.4	Nephrotic syndrome with diffuse endocapillary proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N04.5	Nephrotic syndrome with diffuse mesangiocapillary glomerulonephritis	Diagnosis	ICD-10-CM
N04.6	Nephrotic syndrome with dense deposit disease	Diagnosis	ICD-10-CM
N04.7	Nephrotic syndrome with diffuse crescentic glomerulonephritis	Diagnosis	ICD-10-CM
N04.8	Nephrotic syndrome with other morphologic changes	Diagnosis	ICD-10-CM

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

Code	Description	Code Category	Code Type
N04.9	Nephrotic syndrome with unspecified morphologic changes	Diagnosis	ICD-10-CM
N04.A	Nephrotic syndrome with C3 glomerulonephritis	Diagnosis	ICD-10-CM
N05.0	Unspecified nephritic syndrome with minor glomerular abnormality	Diagnosis	ICD-10-CM
N05.1	Unspecified nephritic syndrome with focal and segmental glomerular lesions	Diagnosis	ICD-10-CM
N05.2	Unspecified nephritic syndrome with diffuse membranous glomerulonephritis	Diagnosis	ICD-10-CM
N05.3	Unspecified nephritic syndrome with diffuse mesangial proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N05.4	Unspecified nephritic syndrome with diffuse endocapillary proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N05.5	Unspecified nephritic syndrome with diffuse mesangiocapillary glomerulonephritis	Diagnosis	ICD-10-CM
N05.6	Unspecified nephritic syndrome with dense deposit disease	Diagnosis	ICD-10-CM
N05.7	Unspecified nephritic syndrome with diffuse crescentic glomerulonephritis	Diagnosis	ICD-10-CM
N05.8	Unspecified nephritic syndrome with other morphologic changes	Diagnosis	ICD-10-CM
N05.9	Unspecified nephritic syndrome with unspecified morphologic changes	Diagnosis	ICD-10-CM
N05.A	Unspecified nephritic syndrome with C3 glomerulonephritis	Diagnosis	ICD-10-CM
N06.0	Isolated proteinuria with minor glomerular abnormality	Diagnosis	ICD-10-CM
N06.1	Isolated proteinuria with focal and segmental glomerular lesions	Diagnosis	ICD-10-CM
N06.2	Isolated proteinuria with diffuse membranous glomerulonephritis	Diagnosis	ICD-10-CM
N06.3	Isolated proteinuria with diffuse mesangial proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N06.4	Isolated proteinuria with diffuse endocapillary proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N06.5	Isolated proteinuria with diffuse mesangiocapillary glomerulonephritis	Diagnosis	ICD-10-CM
N06.6	Isolated proteinuria with dense deposit disease	Diagnosis	ICD-10-CM
N06.7	Isolated proteinuria with diffuse crescentic glomerulonephritis	Diagnosis	ICD-10-CM
N06.8	Isolated proteinuria with other morphologic lesion	Diagnosis	ICD-10-CM
N06.9	Isolated proteinuria with unspecified morphologic lesion	Diagnosis	ICD-10-CM
N06.A	Isolated proteinuria with C3 glomerulonephritis	Diagnosis	ICD-10-CM
N07.0	Hereditary nephropathy, not elsewhere classified with minor glomerular abnormality	Diagnosis	ICD-10-CM
N07.1	Hereditary nephropathy, not elsewhere classified with focal and segmental glomerular lesions	Diagnosis	ICD-10-CM
N07.2	Hereditary nephropathy, not elsewhere classified with diffuse membranous glomerulonephritis	Diagnosis	ICD-10-CM
N07.3	Hereditary nephropathy, not elsewhere classified with diffuse mesangial proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N07.4	Hereditary nephropathy, not elsewhere classified with diffuse endocapillary proliferative glomerulonephritis	Diagnosis	ICD-10-CM
N07.5	Hereditary nephropathy, not elsewhere classified with diffuse mesangiocapillary glomerulonephritis	Diagnosis	ICD-10-CM
N07.6	Hereditary nephropathy, not elsewhere classified with dense deposit disease	Diagnosis	ICD-10-CM

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

Code	Description	Code Category	Code Type
N07.7	Hereditary nephropathy, not elsewhere classified with diffuse crescentic glomerulonephritis	Diagnosis	ICD-10-CM
N07.8	Hereditary nephropathy, not elsewhere classified with other morphologic lesions	Diagnosis	ICD-10-CM
N07.9	Hereditary nephropathy, not elsewhere classified with unspecified morphologic lesions	Diagnosis	ICD-10-CM
N07.A	Hereditary nephropathy, not elsewhere classified with C3 glomerulonephritis	Diagnosis	ICD-10-CM
N08	Glomerular disorders in diseases classified elsewhere	Diagnosis	ICD-10-CM
N11.0	Nonobstructive reflux-associated chronic pyelonephritis	Diagnosis	ICD-10-CM
N11.1	Chronic obstructive pyelonephritis	Diagnosis	ICD-10-CM
N11.8	Other chronic tubulo-interstitial nephritis	Diagnosis	ICD-10-CM
N11.9	Chronic tubulo-interstitial nephritis, unspecified	Diagnosis	ICD-10-CM
N13.1	Hydronephrosis with ureteral stricture, not elsewhere classified	Diagnosis	ICD-10-CM
N13.2	Hydronephrosis with renal and ureteral calculous obstruction	Diagnosis	ICD-10-CM
N13.30	Unspecified hydronephrosis	Diagnosis	ICD-10-CM
N13.39	Other hydronephrosis	Diagnosis	ICD-10-CM
N14.0	Analgesic nephropathy	Diagnosis	ICD-10-CM
N14.1	Nephropathy induced by other drugs, medicaments and biological substances	Diagnosis	ICD-10-CM
N14.11	Contrast-induced nephropathy	Diagnosis	ICD-10-CM
N14.19	Nephropathy induced by other drugs, medicaments and biological	Diagnosis	ICD-10-CM
N14.2	Nephropathy induced by unspecified drug, medicament or biological substance	Diagnosis	ICD-10-CM
N14.3	Nephropathy induced by heavy metals	Diagnosis	ICD-10-CM
N14.4	Toxic nephropathy, not elsewhere classified	Diagnosis	ICD-10-CM
N15.0	Balkan nephropathy	Diagnosis	ICD-10-CM
N15.8	Other specified renal tubulo-interstitial diseases	Diagnosis	ICD-10-CM
N15.9	Renal tubulo-interstitial disease, unspecified	Diagnosis	ICD-10-CM
N16	Renal tubulo-interstitial disorders in diseases classified elsewhere	Diagnosis	ICD-10-CM
N17.0	Acute kidney failure with tubular necrosis	Diagnosis	ICD-10-CM
N17.1	Acute kidney failure with acute cortical necrosis	Diagnosis	ICD-10-CM
N17.2	Acute kidney failure with medullary necrosis	Diagnosis	ICD-10-CM
N17.8	Other acute kidney failure	Diagnosis	ICD-10-CM
N17.9	Acute kidney failure, unspecified	Diagnosis	ICD-10-CM
N18.1	Chronic kidney disease, stage 1	Diagnosis	ICD-10-CM
N18.2	Chronic kidney disease, stage 2 (mild)	Diagnosis	ICD-10-CM
N18.3	Chronic kidney disease, stage 3 (moderate)	Diagnosis	ICD-10-CM
N18.30	Chronic kidney disease, stage 3 unspecified	Diagnosis	ICD-10-CM

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

Code	Description	Code Category	Code Type
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
N25.0	Renal osteodystrophy	Diagnosis	ICD-10-CM
N25.1	Nephrogenic diabetes insipidus	Diagnosis	ICD-10-CM
N25.81	Secondary hyperparathyroidism of renal origin	Diagnosis	ICD-10-CM
N25.89	Other disorders resulting from impaired renal tubular function	Diagnosis	ICD-10-CM
N25.9	Disorder resulting from impaired renal tubular function, unspecified	Diagnosis	ICD-10-CM
N26.1	Atrophy of kidney (terminal)	Diagnosis	ICD-10-CM
N26.9	Renal sclerosis, unspecified	Diagnosis	ICD-10-CM
N99.0	Postprocedural (acute) (chronic) kidney failure	Diagnosis	ICD-10-CM
Q61.02	Congenital multiple renal cysts	Diagnosis	ICD-10-CM
Q61.11	Cystic dilatation of collecting ducts	Diagnosis	ICD-10-CM
Q61.19	Other polycystic kidney, infantile type	Diagnosis	ICD-10-CM
Q61.2	Polycystic kidney, adult type	Diagnosis	ICD-10-CM
Q61.3	Polycystic kidney, unspecified	Diagnosis	ICD-10-CM
Q61.4	Renal dysplasia	Diagnosis	ICD-10-CM
Q61.5	Medullary cystic kidney	Diagnosis	ICD-10-CM
Q61.8	Other cystic kidney diseases	Diagnosis	ICD-10-CM
Q62.0	Congenital hydronephrosis	Diagnosis	ICD-10-CM
Q62.10	Congenital occlusion of ureter, unspecified	Diagnosis	ICD-10-CM
Q62.11	Congenital occlusion of ureteropelvic junction	Diagnosis	ICD-10-CM
Q62.12	Congenital occlusion of ureterovesical orifice	Diagnosis	ICD-10-CM
Q62.2	Congenital megaureter	Diagnosis	ICD-10-CM
Q62.31	Congenital ureterocele, orthotopic	Diagnosis	ICD-10-CM
Q62.32	Cecoureterocele	Diagnosis	ICD-10-CM
Q62.39	Other obstructive defects of renal pelvis and ureter	Diagnosis	ICD-10-CM
R94.4	Abnormal results of kidney function studies	Diagnosis	ICD-10-CM
Dialysis			

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

Code	Description	Code Category	Code Type
458.21	Hypotension of hemodialysis	Diagnosis	ICD-9-CM
792.5	Cloudy (hemodialysis) (peritoneal) dialysis affluent	Diagnosis	ICD-9-CM
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
E870.2	Accidental cut, puncture, perforation, or hemorrhage during kidney dialysis or other perfusion	Diagnosis	ICD-9-CM
E871.2	Foreign object left in body during kidney dialysis or other perfusion	Diagnosis	ICD-9-CM
E872.2	Failure of sterile precautions during kidney dialysis and other perfusion	Diagnosis	ICD-9-CM
E874.2	Mechanical failure of instrument or apparatus 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
I95.3	Hypotension of hemodialysis	Diagnosis	ICD-10-CM
R88.0	Cloudy (hemodialysis) (peritoneal) dialysis effluent	Diagnosis	ICD-10-CM
T85.611A	Breakdown (mechanical) of intraperitoneal dialysis catheter, initial encounter	Diagnosis	ICD-10-CM
T85.621A	Displacement of intraperitoneal dialysis catheter, initial encounter	Diagnosis	ICD-10-CM
T85.631A	Leakage of intraperitoneal dialysis catheter, initial encounter	Diagnosis	ICD-10-CM
T85.691A	Other mechanical complication of intraperitoneal dialysis catheter, initial encounter	Diagnosis	ICD-10-CM
T85.71XA	Infection and inflammatory reaction due to peritoneal dialysis catheter, initial encounter	Diagnosis	ICD-10-CM
V45.1	Renal dialysis status	Diagnosis	ICD-9-CM
V45.11	Renal dialysis status	Diagnosis	ICD-9-CM
V56	Encounter for dialysis and dialysis catheter care	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
Z49.0	Preparatory care for renal dialysis	Diagnosis	ICD-10-CM
Z49.01	Encounter for fitting and adjustment of extracorporeal dialysis catheter	Diagnosis	ICD-10-CM

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

Code	Description	Code Category	Code Type
Z49.02	Encounter for fitting and adjustment of peritoneal dialysis catheter	Diagnosis	ICD-10-CM
Z49.3	Encounter for adequacy testing for dialysis	Diagnosis	ICD-10-CM
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
Z99.2	Dependence on renal dialysis	Diagnosis	ICD-10-CM
Smoking			
305.1	Nondependent tobacco use disorder	Diagnosis	ICD-9-CM
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
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
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

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

Code	Description	Code Category	Code Type
O99.335	Smoking (tobacco) complicating the puerperium	Diagnosis	ICD-10-CM
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

Appendix D. 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), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
Weight Loss Procedures			
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
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 Approach	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

Appendix D. 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), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
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
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

Appendix D. 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), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
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
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
43.82	Laparoscopic vertical (sleeve) gastrectomy	Procedure	ICD-9-CM

Appendix D. 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), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
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

Appendix D. 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), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
52.7	Radical pancreaticoduodenectomy	Procedure	ICD-9-CM
S2082	Laparoscopy, surgical; gastric restrictive procedure, adjustable gastric band includes placement of subcutaneous port	Procedure	HCPCS
Dialysis			
031209D	Bypass Innominate Artery to Upper Arm Vein with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
031209F	Bypass Innominate Artery to Lower Arm Vein with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
03120AD	Bypass Innominate Artery to Upper Arm Vein with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
03120AF	Bypass Innominate Artery to Lower Arm Vein with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
03120JD	Bypass Innominate Artery to Upper Arm Vein with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
03120JF	Bypass Innominate Artery to Lower Arm Vein with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
03120KD	Bypass Innominate Artery to Upper Arm Vein with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
03120KF	Bypass Innominate Artery to Lower Arm Vein with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
03120ZD	Bypass Innominate Artery to Upper Arm Vein, Open Approach	Procedure	ICD-10-PCS
03120ZF	Bypass Innominate Artery to Lower Arm Vein, Open Approach	Procedure	ICD-10-PCS
031309D	Bypass Right Subclavian Artery to Upper Arm Vein with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
031309F	Bypass Right Subclavian Artery to Lower Arm Vein with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
03130AD	Bypass Right Subclavian Artery to Upper Arm Vein with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
03130AF	Bypass Right Subclavian Artery to Lower Arm Vein with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
03130JD	Bypass Right Subclavian Artery to Upper Arm Vein with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
03130JF	Bypass Right Subclavian Artery to Lower Arm Vein with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
03130KD	Bypass Right Subclavian Artery to Upper Arm Vein with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
03130KF	Bypass Right Subclavian Artery to Lower Arm Vein with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
03130ZD	Bypass Right Subclavian Artery to Upper Arm Vein, Open Approach	Procedure	ICD-10-PCS
03130ZF	Bypass Right Subclavian Artery to Lower Arm Vein, Open Approach	Procedure	ICD-10-PCS
031409D	Bypass Left Subclavian Artery to Upper Arm Vein with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
031409F	Bypass Left Subclavian Artery to Lower Arm Vein with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
03140AD	Bypass Left Subclavian Artery to Upper Arm Vein with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
03140AF	Bypass Left Subclavian Artery to Lower Arm Vein with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
03140JD	Bypass Left Subclavian Artery to Upper Arm Vein with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
03140JF	Bypass Left Subclavian Artery to Lower Arm Vein with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
03140KD	Bypass Left Subclavian Artery to Upper Arm Vein with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
03140KF	Bypass Left Subclavian Artery to Lower Arm Vein with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
03140ZD	Bypass Left Subclavian Artery to Upper Arm Vein, Open Approach	Procedure	ICD-10-PCS

Appendix D. 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), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
03140ZF	Bypass Left Subclavian Artery to Lower Arm Vein, Open Approach	Procedure	ICD-10-PCS
031509D	Bypass Right Axillary Artery to Upper Arm Vein with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
031509F	Bypass Right Axillary Artery to Lower Arm Vein with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
031509V	Bypass Right Axillary Artery to Superior Vena Cava with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
03150AD	Bypass Right Axillary Artery to Upper Arm Vein with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
03150AF	Bypass Right Axillary Artery to Lower Arm Vein with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
03150AV	Bypass Right Axillary Artery to Superior Vena Cava with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
03150JD	Bypass Right Axillary Artery to Upper Arm Vein with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
03150JF	Bypass Right Axillary Artery to Lower Arm Vein with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
03150JV	Bypass Right Axillary Artery to Superior Vena Cava with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
03150KD	Bypass Right Axillary Artery to Upper Arm Vein with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
03150KF	Bypass Right Axillary Artery to Lower Arm Vein with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
03150KV	Bypass Right Axillary Artery to Superior Vena Cava with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
03150ZD	Bypass Right Axillary Artery to Upper Arm Vein, Open Approach	Procedure	ICD-10-PCS
03150ZF	Bypass Right Axillary Artery to Lower Arm Vein, Open Approach	Procedure	ICD-10-PCS
03150ZV	Bypass Right Axillary Artery to Superior Vena Cava, Open Approach	Procedure	ICD-10-PCS
031609D	Bypass Left Axillary Artery to Upper Arm Vein with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
031609F	Bypass Left Axillary Artery to Lower Arm Vein with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
031609V	Bypass Left Axillary Artery to Superior Vena Cava with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
03160AD	Bypass Left Axillary Artery to Upper Arm Vein with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
03160AF	Bypass Left Axillary Artery to Lower Arm Vein with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
03160AV	Bypass Left Axillary Artery to Superior Vena Cava with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
03160JD	Bypass Left Axillary Artery to Upper Arm Vein with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
03160JF	Bypass Left Axillary Artery to Lower Arm Vein with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
03160JV	Bypass Left Axillary Artery to Superior Vena Cava with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
03160KD	Bypass Left Axillary Artery to Upper Arm Vein with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
03160KF	Bypass Left Axillary Artery to Lower Arm Vein with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
03160KV	Bypass Left Axillary Artery to Superior Vena Cava with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
03160ZD	Bypass Left Axillary Artery to Upper Arm Vein, Open Approach	Procedure	ICD-10-PCS
03160ZF	Bypass Left Axillary Artery to Lower Arm Vein, Open Approach	Procedure	ICD-10-PCS
03160ZV	Bypass Left Axillary Artery to Superior Vena Cava, Open Approach	Procedure	ICD-10-PCS
031709D	Bypass Right Brachial Artery to Upper Arm Vein with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS

Appendix D. 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), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
031709F	Bypass Right Brachial Artery to Lower Arm Vein with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
031709V	Bypass Right Brachial Artery to Superior Vena Cava with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
03170AD	Bypass Right Brachial Artery to Upper Arm Vein with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
03170AF	Bypass Right Brachial Artery to Lower Arm Vein with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
03170AV	Bypass Right Brachial Artery to Superior Vena Cava with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
03170JD	Bypass Right Brachial Artery to Upper Arm Vein with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
03170JF	Bypass Right Brachial Artery to Lower Arm Vein with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
03170JV	Bypass Right Brachial Artery to Superior Vena Cava with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
03170KD	Bypass Right Brachial Artery to Upper Arm Vein with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
03170KF	Bypass Right Brachial Artery to Lower Arm Vein with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
03170KV	Bypass Right Brachial Artery to Superior Vena Cava with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
03170ZD	Bypass Right Brachial Artery to Upper Arm Vein, Open Approach	Procedure	ICD-10-PCS
03170ZF	Bypass Right Brachial Artery to Lower Arm Vein, Open Approach	Procedure	ICD-10-PCS
03170ZV	Bypass Right Brachial Artery to Superior Vena Cava, Open Approach	Procedure	ICD-10-PCS
031809D	Bypass Left Brachial Artery to Upper Arm Vein with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
031809F	Bypass Left Brachial Artery to Lower Arm Vein with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
031809V	Bypass Left Brachial Artery to Superior Vena Cava with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
03180AD	Bypass Left Brachial Artery to Upper Arm Vein with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
03180AF	Bypass Left Brachial Artery to Lower Arm Vein with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
03180AV	Bypass Left Brachial Artery to Superior Vena Cava with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
03180JD	Bypass Left Brachial Artery to Upper Arm Vein with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
03180JF	Bypass Left Brachial Artery to Lower Arm Vein with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
03180JV	Bypass Left Brachial Artery to Superior Vena Cava with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
03180KD	Bypass Left Brachial Artery to Upper Arm Vein with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
03180KF	Bypass Left Brachial Artery to Lower Arm Vein with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
03180KV	Bypass Left Brachial Artery to Superior Vena Cava with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
03180ZD	Bypass Left Brachial Artery to Upper Arm Vein, Open Approach	Procedure	ICD-10-PCS
03180ZF	Bypass Left Brachial Artery to Lower Arm Vein, Open Approach	Procedure	ICD-10-PCS
03180ZV	Bypass Left Brachial Artery to Superior Vena Cava, Open Approach	Procedure	ICD-10-PCS
031909F	Bypass Right Ulnar Artery to Lower Arm Vein with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
03190AF	Bypass Right Ulnar Artery to Lower Arm Vein with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
03190JF	Bypass Right Ulnar Artery to Lower Arm Vein with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS

Appendix D. 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), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
03190KF	Bypass Right Ulnar Artery to Lower Arm Vein with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
03190ZF	Bypass Right Ulnar Artery to Lower Arm Vein, Open Approach	Procedure	ICD-10-PCS
031A09F	Bypass Left Ulnar Artery to Lower Arm Vein with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
031A0AF	Bypass Left Ulnar Artery to Lower Arm Vein with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
031A0JF	Bypass Left Ulnar Artery to Lower Arm Vein with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
031A0KF	Bypass Left Ulnar Artery to Lower Arm Vein with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
031A0ZF	Bypass Left Ulnar Artery to Lower Arm Vein, Open Approach	Procedure	ICD-10-PCS
031B09F	Bypass Right Radial Artery to Lower Arm Vein with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
031B0AF	Bypass Right Radial Artery to Lower Arm Vein with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
031B0JF	Bypass Right Radial Artery to Lower Arm Vein with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
031B0KF	Bypass Right Radial Artery to Lower Arm Vein with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
031B0ZF	Bypass Right Radial Artery to Lower Arm Vein, Open Approach	Procedure	ICD-10-PCS
031C09F	Bypass Left Radial Artery to Lower Arm Vein with Autologous Venous Tissue, Open Approach	Procedure	ICD-10-PCS
031C0AF	Bypass Left Radial Artery to Lower Arm Vein with Autologous Arterial Tissue, Open Approach	Procedure	ICD-10-PCS
031C0JF	Bypass Left Radial Artery to Lower Arm Vein with Synthetic Substitute, Open Approach	Procedure	ICD-10-PCS
031C0KF	Bypass Left Radial Artery to Lower Arm Vein with Nonautologous Tissue Substitute, Open Approach	Procedure	ICD-10-PCS
031C0ZF	Bypass Left Radial Artery to Lower Arm Vein, Open Approach	Procedure	ICD-10-PCS
03PY07Z	Removal of Autologous Tissue Substitute from Upper Artery, Open Approach	Procedure	ICD-10-PCS
03PY0JZ	Removal of Synthetic Substitute from Upper Artery, Open Approach	Procedure	ICD-10-PCS
03PY0KZ	Removal of Nonautologous Tissue Substitute from Upper Artery, Open Approach	Procedure	ICD-10-PCS
03PY37Z	Removal of Autologous Tissue Substitute from Upper Artery, Percutaneous Approach	Procedure	ICD-10-PCS
03PY3JZ	Removal of Synthetic Substitute from Upper Artery, Percutaneous Approach	Procedure	ICD-10-PCS
03PY3KZ	Removal of Nonautologous Tissue Substitute from Upper Artery, Percutaneous Approach	Procedure	ICD-10-PCS
03PY47Z	Removal of Autologous Tissue Substitute from Upper Artery, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
03PY4JZ	Removal of Synthetic Substitute from Upper Artery, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
03PY4KZ	Removal of Nonautologous Tissue Substitute from Upper Artery, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
0505F	Hemodialysis plan of care documented (ESRD, P-ESRD)	Procedure	CPT-2
0507F	Peritoneal dialysis plan of care documented (ESRD)	Procedure	CPT-2
05HY33Z	Insertion of Infusion Device into Upper Vein, Percutaneous Approach	Procedure	ICD-10-PCS
06HY33Z	Insertion of Infusion Device into Lower Vein, Percutaneous Approach	Procedure	ICD-10-PCS
08923ZZ	Drainage of Right Anterior Chamber, Percutaneous Approach	Procedure	ICD-10-PCS
08933ZZ	Drainage of Left Anterior Chamber, Percutaneous Approach	Procedure	ICD-10-PCS

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Code	Description	Code Category	Code Type
35686	Creation of distal arteriovenous fistula during lower extremity bypass surgery (non-hemodialysis) (List separately in addition to code for primary procedure)	Procedure	CPT-4
35875	Thrombectomy of arterial or venous graft (other than hemodialysis graft or fistula);	Procedure	CPT-4
35876	Thrombectomy of arterial or venous graft (other than hemodialysis graft or fistula); with revision of arterial or venous graft	Procedure	CPT-4
36145	Introduction of needle or intracatheter; arteriovenous shunt created for dialysis (cannula, fistula, or graft)	Procedure	CPT-4
36147	Introduction of needle and/or catheter, arteriovenous shunt created for dialysis (graft/fistula); initial access with complete radiological evaluation of dialysis access, including fluoroscopy, image documentation and report (includes access of shunt, injection[s] of contrast, and all necessary imaging from the arterial anastomosis and adjacent artery through entire venous outflow including the inferior or superior vena cava)	Procedure	CPT-4
36148	Introduction of needle and/or catheter, arteriovenous shunt created for dialysis (graft/fistula); additional access for therapeutic intervention (List separately in addition to code for primary procedure)	Procedure	CPT-4
36488	Placement of central venous catheter (subclavian, jugular, or other vein) (eg, for central venous pressure, hyperalimentation, hemodialysis, or chemotherapy); percutaneous, age 2 years or under	Procedure	CPT-4
36489	Placement of central venous catheter (subclavian, jugular, or other vein) (eg, for central venous pressure, hyperalimentation, hemodialysis, or chemotherapy); percutaneous, over age 2	Procedure	CPT-4
36490	Placement of central venous catheter (subclavian, jugular, or other vein) (eg, for central venous pressure, hyperalimentation, hemodialysis, or chemotherapy); cutdown, age 2 years or under	Procedure	CPT-4
36491	Placement of central venous catheter (subclavian, jugular, or other vein) (eg, for central venous pressure, hyperalimentation, hemodialysis, or chemotherapy); cutdown, over age 2	Procedure	CPT-4
36800	Insertion of cannula for hemodialysis, other purpose (separate procedure); vein to vein	Procedure	CPT-4
36810	Insertion of cannula for hemodialysis, other purpose (separate procedure); arteriovenous, external (Scribner type)	Procedure	CPT-4
36815	Insertion of cannula for hemodialysis, other purpose (separate procedure); arteriovenous, external revision, or closure	Procedure	CPT-4
36818	Arteriovenous anastomosis, open; by upper arm cephalic vein transposition	Procedure	CPT-4
36819	Arteriovenous anastomosis, open; by upper arm basilic vein transposition	Procedure	CPT-4
36820	Arteriovenous anastomosis, open; by forearm vein transposition	Procedure	CPT-4
36821	Arteriovenous anastomosis, open; direct, any site (eg, Cimino type) (separate procedure)	Procedure	CPT-4
36838	Distal revascularization and interval ligation (DRIL), upper extremity hemodialysis access (steal syndrome)	Procedure	CPT-4
36901	Introduction of needle(s) and/or catheter(s), dialysis circuit, with diagnostic angiography of the dialysis circuit, including all direct puncture(s) and catheter placement(s), injection(s) of contrast, all necessary imaging from the arterial anastomosis and adjacent artery through entire venous outflow including the inferior or superior vena cava, fluoroscopic guidance, radiological supervision and interpretation and image documentation and report;	Procedure	CPT-4

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Code	Description	Code Category	Code Type
36902	Introduction of needle(s) and/or catheter(s), dialysis circuit, with diagnostic angiography of the dialysis circuit, including all direct puncture(s) and catheter placement(s), injection(s) of contrast, all necessary imaging from the arterial anastomosis and adjacent artery through entire venous outflow including the inferior or superior vena cava, fluoroscopic guidance, radiological supervision and interpretation and image documentation and report; with transluminal balloon angioplasty, peripheral dialysis segment, including all imaging and radiological supervision and interpretation necessar	Procedure	CPT-4
36903	Introduction of needle(s) and/or catheter(s), dialysis circuit, with diagnostic angiography of the dialysis circuit, including all direct puncture(s) and catheter placement(s), injection(s) of contrast, all necessary imaging from the arterial anastomosis and adjacent artery through entire venous outflow including the inferior or superior vena cava, fluoroscopic guidance, radiological supervision and interpretation and image documentation and report; with transcatheter placement of intravascular stent(s), peripheral dialysis segment, including all imaging and radiological supervision and interp	Procedure	CPT-4
36904	Percutaneous transluminal mechanical thrombectomy and/or infusion for thrombolysis, dialysis circuit, any method, including all imaging and radiological supervision and interpretation, diagnostic angiography, fluoroscopic guidance, catheter placement(s), and intraprocedural pharmacological thrombolytic injection(s);	Procedure	CPT-4
36905	Percutaneous transluminal mechanical thrombectomy and/or infusion for thrombolysis, dialysis circuit, any method, including all imaging and radiological supervision and interpretation, diagnostic angiography, fluoroscopic guidance, catheter placement(s), and intraprocedural pharmacological thrombolytic injection(s); with transluminal balloon angioplasty, peripheral dialysis segment, including all imaging and radiological supervision and interpretation necessary to perform the angioplasty	Procedure	CPT-4
36906	Percutaneous transluminal mechanical thrombectomy and/or infusion for thrombolysis, dialysis circuit, any method, including all imaging and radiological supervision and interpretation, diagnostic angiography, fluoroscopic guidance, catheter placement(s), and intraprocedural pharmacological thrombolytic injection(s); with transcatheter placement of intravascular stent(s), peripheral dialysis segment, including all imaging and radiological supervision and interpretation necessary to perform the stenting, and all angioplasty within the peripheral dialysis circuit	Procedure	CPT-4
36907	Transluminal balloon angioplasty, central dialysis segment, performed through dialysis circuit, including all imaging and radiological supervision and interpretation required to perform the angioplasty (List separately in addition to code for primary procedure)	Procedure	CPT-4
36908	Transcatheter placement of intravascular stent(s), central dialysis segment, performed through dialysis circuit, including all imaging and radiological supervision and interpretation required to perform the stenting, and all angioplasty in the central dialysis segment (List separately in addition to code for primary procedure)	Procedure	CPT-4

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Code	Description	Code Category	Code Type
36909	Dialysis circuit permanent vascular embolization or occlusion (including main circuit or any accessory veins), endovascular, including all imaging and radiological supervision and interpretation necessary to complete the intervention (List separately in addition to code for primary procedure)	Procedure	CPT-4
38.95	Venous catheterization for renal dialysis	Procedure	ICD-9-CM
39.27	Arteriovenostomy for renal dialysis	Procedure	ICD-9-CM
39.42	Revision of arteriovenous shunt for renal dialysis	Procedure	ICD-9-CM
39.43	Removal of arteriovenous shunt for renal dialysis	Procedure	ICD-9-CM
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
49324	Laparoscopy, surgical; with insertion of tunneled intraperitoneal catheter	Procedure	CPT-4
49325	Laparoscopy, surgical; with revision of previously placed intraperitoneal cannula or catheter, with removal of intraluminal obstructive material if performed	Procedure	CPT-4
49418	Insertion of tunneled intraperitoneal catheter (eg, dialysis, intraperitoneal chemotherapy instillation, management of ascites), complete procedure, including imaging guidance, catheter placement, contrast injection when performed, and radiological supervision and interpretation, percutaneous	Procedure	CPT-4
49419	Insertion of tunneled intraperitoneal catheter, with subcutaneous port (ie, totally implantable)	Procedure	CPT-4
49420	Insertion of intraperitoneal cannula or catheter for drainage or dialysis; temporary	Procedure	CPT-4
49421	Insertion of tunneled intraperitoneal catheter for dialysis, open	Procedure	CPT-4
49422	Removal of tunneled intraperitoneal catheter	Procedure	CPT-4
49435	Insertion of subcutaneous extension to intraperitoneal cannula or catheter with remote chest exit site (List separately in addition to code for primary procedure)	Procedure	CPT-4
54.98	Peritoneal dialysis	Procedure	ICD-9-CM
5A1D70Z	Performance of Urinary Filtration, Intermittent, Less than 6 Hours Per Day	Procedure	ICD-10-PCS
5A1D80Z	Performance of Urinary Filtration, Prolonged Intermittent, 6-18 hours Per Day	Procedure	ICD-10-PCS
5A1D90Z	Performance of Urinary Filtration, Continuous, Greater than 18 hours Per Day	Procedure	ICD-10-PCS
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

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Code	Description	Code Category	Code Type
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
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
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

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Code	Description	Code Category	Code Type
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
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
90997	Hemoperfusion (eg, with activated charcoal or resin)	Procedure	CPT-4
90999	Unlisted dialysis procedure, inpatient or outpatient	Procedure	CPT-4
93985	Duplex scan of arterial inflow and venous outflow for preoperative vessel assessment prior to creation of hemodialysis access; complete bilateral study	Procedure	CPT-4
93986	Duplex scan of arterial inflow and venous outflow for preoperative vessel assessment prior to creation of hemodialysis access; complete unilateral study	Procedure	CPT-4
93990	Duplex scan of hemodialysis access (including arterial inflow, body of access and venous outflow)	Procedure	CPT-4
99512	Home visit for hemodialysis	Procedure	CPT-4
99559	Home infusion of peritoneal dialysis, per visit	Procedure	CPT-4
A4653	Peritoneal dialysis catheter anchoring device, belt, each	Procedure	HCPCS
A4655	Needles and syringes for dialysis	Procedure	HCPCS
A4671	Disposable cycler set used with cycler dialysis machine, each	Procedure	HCPCS
A4672	Drainage extension line, sterile, for dialysis, each	Procedure	HCPCS
A4673	Extension line with easy lock connectors, used with dialysis	Procedure	HCPCS
A4674	Chemicals/antiseptics solution used to clean/sterilize dialysis equipment, per 8 oz	Procedure	HCPCS
A4680	Activated carbon filter for hemodialysis, each	Procedure	HCPCS
A4690	Dialyzer (artificial kidneys), all types, all sizes, for hemodialysis, each	Procedure	HCPCS
A4706	Bicarbonate concentrate, solution, for hemodialysis, per gallon	Procedure	HCPCS
A4707	Bicarbonate concentrate, powder, for hemodialysis, per packet	Procedure	HCPCS
A4708	Acetate concentrate solution, for hemodialysis, per gallon	Procedure	HCPCS
A4709	Acid concentrate, solution, for hemodialysis, per gallon	Procedure	HCPCS
A4714	Treated water (deionized, distilled, or reverse osmosis) for peritoneal dialysis, per gallon	Procedure	HCPCS

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Code	Description	Code Category	Code Type
A4719	"Y set" tubing for peritoneal dialysis	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
A4730	Fistula cannulation set for hemodialysis, each	Procedure	HCPCS
A4735	Local/topical anesthetics for dialysis only	Procedure	HCPCS
A4736	Topical anesthetic, for dialysis, per g	Procedure	HCPCS
A4737	Injectable anesthetic, for dialysis, per 10 ml	Procedure	HCPCS
A4740	Shunt accessory, for hemodialysis, any type, each	Procedure	HCPCS
A4750	Blood tubing, arterial or venous, for hemodialysis, each	Procedure	HCPCS
A4755	Blood tubing, arterial and venous combined, for hemodialysis, each	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
A4770	Blood collection tube, vacuum, for dialysis, per 50	Procedure	HCPCS
A4771	Serum clotting time tube, for dialysis, per 50	Procedure	HCPCS
A4772	Blood glucose test strips, for dialysis, per 50	Procedure	HCPCS
A4773	Occult blood test strips, for dialysis, per 50	Procedure	HCPCS
A4774	Ammonia test strips, for dialysis, per 50	Procedure	HCPCS
A4780	Sterilizing agent for dialysis equipment, per gallon	Procedure	HCPCS
A4790	Cleansing agents for equipment for dialysis only	Procedure	HCPCS

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Code	Description	Code Category	Code Type
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
A4801	Heparin, any type, for hemodialysis, per 1000 units	Procedure	HCPCS
A4802	Protamine sulfate, for hemodialysis, per 50 mg	Procedure	HCPCS
A4820	Hemodialysis kit supplies	Procedure	HCPCS
A4850	Hemostats with rubber tips for dialysis	Procedure	HCPCS
A4860	Disposable catheter tips for peritoneal dialysis, per 10	Procedure	HCPCS
A4870	Plumbing and/or electrical work for home hemodialysis equipment	Procedure	HCPCS
A4880	Storage tanks utilized in connection with water purification system, replacement tanks for dialysis	Procedure	HCPCS
A4890	Contracts, repair and maintenance, for hemodialysis equipment	Procedure	HCPCS
A4900	Continuous ambulatory peritoneal dialysis (capd) supply kit	Procedure	HCPCS
A4901	Continuous cycling peritoneal dialysis (ccpd) supply kit	Procedure	HCPCS
A4905	Intermittent peritoneal dialysis (ipd) supply kit	Procedure	HCPCS
A4910	Non-medical supplies for dialysis, (i.e., scale, scissors, stopwatch, etc.)	Procedure	HCPCS
A4911	Drain bag/bottle, for dialysis, each	Procedure	HCPCS
A4913	Miscellaneous dialysis supplies, not otherwise specified	Procedure	HCPCS
A4918	Venous pressure clamp, for hemodialysis, each	Procedure	HCPCS
A4929	Tourniquet for dialysis, each	Procedure	HCPCS
B50W	Plain Radiography / Dialysis Shunt/Fistula	Procedure	ICD-10-PCS
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
B51W	Fluoroscopy / Dialysis Shunt/Fistula	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

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Code	Description	Code Category	Code Type
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
C1152	Access system, dialysis, lifesite access system	Procedure	HCPCS
C1750	Catheter, hemodialysis/peritoneal, long-term	Procedure	HCPCS
C1751	Catheter, infusion, inserted peripherally, centrally or midline (other than hemodialysis)	Procedure	HCPCS
C1752	Catheter, hemodialysis/peritoneal, short-term	Procedure	HCPCS
C1881	Dialysis access system (implantable)	Procedure	HCPCS
C7513	Dialysis circuit, introduction of needle(s) and/or catheter(s), with diagnostic angiography of the dialysis circuit, including all direct puncture(s) and catheter placement(s), injection(s) of contrast, all necessary imaging from the arterial anastomosis and adjacent artery through entire venous outflow including the inferior or superior vena cava, fluoroscopic guidance, with transluminal balloon angioplasty of central dialysis segment, performed through dialysis circuit, including all required imaging, radiological supervision and interpretation, image documentation and report	Procedure	HCPCS
C7514	Dialysis circuit, introduction of needle(s) and/or catheter(s), with diagnostic angiography of the dialysis circuit, including all direct puncture(s) and catheter placement(s), injection(s) of contrast, all necessary imaging from the arterial anastomosis and adjacent artery through entire venous outflow including the inferior or superior vena cava, fluoroscopic guidance, with all angioplasty in the central dialysis segment, and transcatheter placement of intravascular stent(s), central dialysis segment, performed through dialysis circuit, including all required imaging, radiological supervisi	Procedure	HCPCS
C7515	Dialysis circuit, introduction of needle(s) and/or catheter(s), with diagnostic angiography of the dialysis circuit, including all direct puncture(s) and catheter placement(s), injection(s) of contrast, all necessary imaging from the arterial anastomosis and adjacent artery through entire venous outflow including the inferior or superior vena cava, fluoroscopic guidance, with dialysis circuit permanent endovascular embolization or occlusion of main circuit or any accessory veins, including all required imaging, radiological supervision and interpretation, image documentation and report	Procedure	HCPCS
C7530	Dialysis circuit, introduction of needle(s) and/or catheter(s), with diagnostic angiography of the dialysis circuit, including all direct puncture(s) and catheter placement(s), injection(s) of contrast, all necessary imaging from the arterial anastomosis and adjacent artery through entire venous outflow including the inferior or superior vena cava, fluoroscopic guidance, with transluminal balloon angioplasty, peripheral dialysis segment, including all imaging and radiological supervision and interpretation necessary to perform the angioplasty and all angioplasty in the central dialysis segment	Procedure	HCPCS
E1500	Centrifuge, for dialysis	Procedure	HCPCS

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Code	Description	Code Category	Code Type
E1520	Heparin infusion pump for hemodialysis	Procedure	HCPCS
E1530	Air bubble detector for hemodialysis, each, replacement	Procedure	HCPCS
E1540	Pressure alarm for hemodialysis, each, replacement	Procedure	HCPCS
E1550	Bath conductivity meter for hemodialysis, each	Procedure	HCPCS
E1560	Blood leak detector for hemodialysis, each, replacement	Procedure	HCPCS
E1575	Transducer protectors/fluid barriers, for hemodialysis, any size, per 10	Procedure	HCPCS
E1580	Unipuncture control system for hemodialysis	Procedure	HCPCS
E1590	Hemodialysis machine	Procedure	HCPCS
E1592	Automatic intermittent peritoneal dialysis system	Procedure	HCPCS
E1594	Cycler dialysis machine for peritoneal dialysis	Procedure	HCPCS
E1600	Delivery and/or installation charges for hemodialysis equipment	Procedure	HCPCS
E1610	Reverse osmosis water purification system, for hemodialysis	Procedure	HCPCS
E1615	Deionizer water purification system, for hemodialysis	Procedure	HCPCS
E1620	Blood pump for hemodialysis, replacement	Procedure	HCPCS
E1625	Water softening system, for hemodialysis	Procedure	HCPCS
E1629	Tablo hemodialysis system for the billable dialysis service	Procedure	HCPCS
E1630	Reciprocating peritoneal dialysis system	Procedure	HCPCS
E1634	Peritoneal dialysis clamps, each	Procedure	HCPCS
E1636	Sorbent cartridges, for hemodialysis, per 10	Procedure	HCPCS
E1638	Heating pad, for peritoneal dialysis, any size, each	Procedure	HCPCS
E1640	Replacement components for hemodialysis and/or peritoneal dialysis machines that are owned or being purchased by the patient	Procedure	HCPCS
E1699	Dialysis equipment, not otherwise specified	Procedure	HCPCS
G0049	With maintenance hemodialysis (in-center and home HD) for the complete reporting month	Procedure	HCPCS
G0052	Patients on peritoneal dialysis for any portion of the reporting month	Procedure	HCPCS
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
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

Appendix D. 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), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
G0365	Vessel mapping of vessels for hemodialysis access (services for preoperative vessel mapping prior to creation of hemodialysis access using an autogenous hemodialysis conduit, including arterial inflow and venous outflow)	Procedure	HCPCS
G0392	Transluminal balloon angioplasty, percutaneous; for maintenance of hemodialysis access, arteriovenous fistula or graft; arterial	Procedure	HCPCS
G0393	Transluminal balloon angioplasty, percutaneous; for maintenance of hemodialysis access, arteriovenous fistula or graft; venous	Procedure	HCPCS
G0491	Dialysis procedure at a Medicare certified ESRD facility for acute kidney injury without ESRD	Procedure	HCPCS
G0492	Dialysis procedure with single evaluation by a physician or other qualified health care professional for acute kidney injury without ESRD	Procedure	HCPCS
G1026	The number of adult patient-months in the denominator who were on maintenance hemodialysis using a catheter continuously for 3 months or longer under the care of the same practitioner or group partner as of the last hemodialysis session of the reporting month	Procedure	HCPCS
G1027	The number of adult patient-months in the denominator who were on maintenance hemodialysis under the care of the same practitioner or group partner as of the last hemodialysis session of the reporting month using a catheter continuously for less than 3 months	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
G8575	Developed postoperative renal failure or required dialysis	Procedure	HCPCS
G8576	No postoperative renal failure/dialysis not required	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
G8956	Patient receiving maintenance hemodialysis in an outpatient dialysis facility	Procedure	HCPCS
G8957	Patient not receiving maintenance hemodialysis in an outpatient dialysis facility	Procedure	HCPCS
G9239	Documentation of reasons for patient initiating maintenance hemodialysis with a catheter as the mode of vascular access (e.g., patient has a maturing arteriovenous fistula (AVF)/arteriovenous graft (AVG), time limited trial of hemodialysis, other medical reasons, patient declined AVF/AVG, other patient reasons, patient followed by reporting nephrologist for fewer than 90 days, other system reasons)	Procedure	HCPCS
G9240	Patient whose mode of vascular access is a catheter at the time maintenance hemodialysis is initiated	Procedure	HCPCS

Appendix D. 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), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
G9241	Patient whose mode of vascular access is not a catheter at the time maintenance hemodialysis is initiated	Procedure	HCPCS
G9264	Documentation of patient receiving maintenance hemodialysis for greater than or equal to 90 days with a catheter for documented reasons (e.g., other medical reasons, patient declined arteriovenous fistula (AVF)/arteriovenous graft (AVG), other patient reasons)	Procedure	HCPCS
G9265	Patient receiving maintenance hemodialysis for greater than or equal to 90 days with a catheter as the mode of vascular access	Procedure	HCPCS
G9266	Patient receiving maintenance hemodialysis for greater than or equal to 90 days without a catheter as the mode of vascular access	Procedure	HCPCS
G9523	Patient discontinued from hemodialysis or peritoneal dialysis	Procedure	HCPCS
G9747	Patient is undergoing palliative dialysis with a catheter	Procedure	HCPCS
G9749	Patient is undergoing palliative dialysis with a catheter	Procedure	HCPCS
J0604	Cinacalcet, oral, 1 mg, (for ESRD on dialysis)	Procedure	HCPCS
J0879	Injection, difelikefalin, 0.1 mcg, (for ESRD on dialysis)	Procedure	HCPCS
J0882	Injection, darbepoetin alfa, 1 mcg (for ESRD on dialysis)	Procedure	HCPCS
J0884	Injection, argatroban, 1 mg (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
J0889	Daprodustat, oral, 1 mg, (for ESRD on dialysis)	Procedure	HCPCS
J0890	Injection, peginesatide, 0.1 mg (for ESRD on dialysis)	Procedure	HCPCS
J0892	Injection, argatroban (Accord), not therapeutically equivalent to J0884, 1 mg (for ESRD on dialysis)	Procedure	HCPCS
J0899	Injection, argatroban (AuroMedics), not therapeutically equivalent to J0884, 1 mg (for ESRD on dialysis)	Procedure	HCPCS
J3591	Unclassified drug or biological used for ESRD on dialysis	Procedure	HCPCS
K0610	Peritoneal dialysis clamp, each	Procedure	HCPCS
K0611	Disposable cycler set used with cycler dialysis machine, each	Procedure	HCPCS
K0612	Drainage extension line, sterile, for dialysis, each	Procedure	HCPCS
K0613	Extension line with easy lock connectors, used with dialysis	Procedure	HCPCS
K0614	Chemicals/antiseptic solution used to clean/sterilize dialysis equipment, per 8 oz	Procedure	HCPCS
M1262	Patients who had a transplant prior to initiation of dialysis	Procedure	HCPCS
M1263	Patients in hospice on their initiation of dialysis date or during the month of evaluation	Procedure	HCPCS
M1264	Patients age 75 or older on their initiation of dialysis date	Procedure	HCPCS
M1269	Receiving ESRD MCP dialysis services by the provider on the last day of the reporting month	Procedure	HCPCS

Appendix D. 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), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
M1273	Patients who were admitted to a skilled nursing facility (SNF) within 1 year of dialysis initiation according to the CMS-2728 Form	Procedure	HCPCS
Q0139	Injection, ferumoxytol, for treatment of iron deficiency anemia, 1 mg (for ESRD on dialysis)	Procedure	HCPCS
Q2047	Injection, peginesatide, 0.1 mg (for ESRD on dialysis)	Procedure	HCPCS
Q3023	Injection, hepatitis B vaccine, immunosuppressed patients (including renal dialysis patients), per dose	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
Q9972	Injection, epoetin beta, 1 microgram, (for ESRD on dialysis)	Procedure	HCPCS
S0194	Dialysis/stress vitamin supplement, oral, 100 capsules	Procedure	HCPCS
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
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
Smoking			
1034F	Current tobacco smoker (CAD, CAP, COPD, PV) (DM)	Procedure	CPT-4
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
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
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 user	Procedure	HCPCS

Appendix D. 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), and International Classification of Diseases, Tenth Revision, Procedural Coding System (ICD-10-PCS) Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
S4995	Smoking cessation gum	Procedure	HCPCS
S9075	Smoking cessation treatment	Procedure	HCPCS
S9453	Smoking cessation classes, nonphysician provider, per session	Procedure	HCPCS
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

Appendix E. List of Non-Proprietary and Proprietary Names of Medical Products Used to Define Baseline Characteristics in this Request

Non-Proprietary Name	Proprietary Name
Smoking	
bupropion HCl	Buproban
bupropion HCl	Zyban
bupropion HCl	bupropion HCl (smoking deter)
nicotine	Habitrol
nicotine	NTS Step 1
nicotine	NTS Step 2
nicotine	NTS Step 3
nicotine	Nicoderm
nicotine	Nicoderm CQ
nicotine	Nicotrol
nicotine	Nicotrol NS
nicotine	Prostep
nicotine	
nicotine bitartrate	Nicotine Tartrate
nicotine polacrilex	Commit
nicotine polacrilex	Nicorelief
nicotine polacrilex	Nicorette
nicotine polacrilex	Nicorette Refill
nicotine polacrilex	Nicorette Starter Kit
nicotine polacrilex	Quit 2
nicotine polacrilex	Quit 4
nicotine polacrilex	Stop Smoking Aid
nicotine polacrilex	Thrive Nicotine
nicotine polacrilex	nicotine (polacrilex)
nicotine polacrilex	nicotine polacrilex (bulk)
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	varenicline
Metformin	
alogliptin benzoate/metformin HCl	Kazano
alogliptin benzoate/metformin HCl	alogliptin-metformin
canagliflozin/metformin HCl	Invokamet
canagliflozin/metformin HCl	Invokamet XR
dapagliflozin propanediol/metformin HCl	Xigduo XR
dapagliflozin propanediol/metformin HCl	dapaglifloz propaned-metformin
empagliflozin/linagliptin/metformin HCl	Trijardy XR
empagliflozin/metformin HCl	Synjardy
empagliflozin/metformin HCl	Synjardy XR
ertugliflozin pidolate/metformin HCl	Segluromet
glipizide/metformin HCl	glipizide-metformin
glyburide/metformin HCl	Glucovance
glyburide/metformin HCl	glyburide-metformin
linagliptin/metformin HCl	Jentadueto

Appendix E. List of Non-Proprietary and Proprietary Names of Medical Products Used to Define Baseline Characteristics in this Request

Non-Proprietary Name	Proprietary Name
linagliptin/metformin HCl	Jentadueto XR
metformin HCl	Fortamet
metformin HCl	Glucophage
metformin HCl	Glucophage XR
metformin HCl	Glumetza
metformin HCl	Riomet
metformin HCl	Riomet ER
metformin HCl	metformin
metformin HCl/blood sugar diagnostic	DM2
pioglitazone HCl/metformin HCl	Actoplus MET
pioglitazone HCl/metformin HCl	Actoplus Met XR
pioglitazone HCl/metformin HCl	pioglitazone-metformin
repaglinide/metformin HCl	Prandimet
repaglinide/metformin HCl	repaglinide-metformin
rosiglitazone maleate/metformin HCl	Avandamet
saxagliptin HCl/metformin HCl	Kombiglyze XR
saxagliptin HCl/metformin HCl	saxagliptin-metformin
sitagliptin phosphate/metformin HCl	Janumet
sitagliptin phosphate/metformin HCl	Janumet XR
Sulfonylureas	
chlorpropamide	chlorpropamide
glimepiride	Amaryl
glimepiride	glimepiride
glipizide	Glucotrol
glipizide	Glucotrol XL
glipizide	glipizide
glipizide/metformin HCl	glipizide-metformin
glyburide	Diabeta
glyburide	glyburide
glyburide,micronized	Glynase
glyburide,micronized	glyburide micronized
glyburide/metformin HCl	Glucovance
glyburide/metformin HCl	glyburide-metformin
pioglitazone HCl/glimepiride	DUETACT
pioglitazone HCl/glimepiride	pioglitazone-glimepiride
rosiglitazone maleate/glimepiride	Avandaryl
tolazamide	tolazamide
tolbutamide	tolbutamide
Thiazolidinedione	
alogliptin benzoate/pioglitazone HCl	Oseni
alogliptin benzoate/pioglitazone HCl	alogliptin-pioglitazone
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

Appendix E. List of Non-Proprietary and Proprietary Names of Medical Products Used to Define Baseline Characteristics in this Request

Non-Proprietary Name	Proprietary Name
pioglitazone HCl/metformin HCl	pioglitazone-metformin
rosiglitazone maleate	Avandia
rosiglitazone maleate/glimepiride	Avandaryl
rosiglitazone maleate/metformin HCl	Avandamet
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 and lixisenatide	Soliqua 100/33
insulin glargine,human recombinant analog	Basaglar KwikPen U-100 Insulin
insulin glargine,human recombinant analog	Basaglar Tempo Pen(U-100)Insln
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
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

Appendix E. List of Non-Proprietary and Proprietary Names of Medical Products Used to Define Baseline Characteristics in this Request

Non-Proprietary Name	Proprietary Name
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
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 Insuln
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
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
Alpha-Glucosidase Inhibitor	
acarbose	Precose
acarbose	acarbose
miglitol	Glyset
miglitol	miglitol
Meglitinides	
nateglinide	Starlix
nateglinide	nateglinide
repaglinide	Prandin
repaglinide	repaglinide
repaglinide/metformin HCl	Prandimet
repaglinide/metformin HCl	repaglinide-metformin
DPP-4 Inhibitors	
alogliptin benzoate	Nesina
alogliptin benzoate	alogliptin
alogliptin benzoate/metformin HCl	Kazano
alogliptin benzoate/metformin HCl	alogliptin-metformin

Appendix E. List of Non-Proprietary and Proprietary Names of Medical Products Used to Define Baseline Characteristics in this Request

Non-Proprietary Name	Proprietary Name
alogliptin benzoate/pioglitazone HCl	Oseni
alogliptin benzoate/pioglitazone HCl	alogliptin-pioglitazone
linagliptin	Tradjenta
linagliptin/metformin HCl	Jentadueto
linagliptin/metformin HCl	Jentadueto XR
saxagliptin HCl	Onglyza
saxagliptin HCl	saxagliptin
saxagliptin HCl/metformin HCl	Kombiglyze XR
saxagliptin HCl/metformin HCl	saxagliptin-metformin
sitagliptin phosphate	Januvia
sitagliptin phosphate/metformin HCl	Janumet
sitagliptin phosphate/metformin HCl	Janumet XR
sitagliptin phosphate/simvastatin	Juvisync
SGLT-2 Inhibitors	
bexagliflozin	Brenzavvy
bexagliflozin	bexagliflozin
canagliflozin	INVOKANA
canagliflozin	Invokana
canagliflozin/metformin HCl	Invokamet
canagliflozin/metformin HCl	Invokamet XR
dapagliflozin propanediol	Farxiga
dapagliflozin propanediol/metformin HCl	Xigduo XR
empagliflozin	Jardiance
empagliflozin/metformin HCl	Synjardy
empagliflozin/metformin HCl	Synjardy XR
ertugliflozin pidolate	Steglatro
ertugliflozin pidolate/metformin HCl	Segluromet
sotagliflozin	Inpefa
Other Oral Diabetes Drugs (Bromocriptine, Colesevelam)	
bromocriptine mesylate	Cycloset
bromocriptine mesylate	Parlodel
bromocriptine mesylate	bromocriptine
colesevelam HCl	WelChol
colesevelam HCl	colesevelam

Appendix F. Specifications Defining Parameters in This Request

The Center for Drug Evaluation and Research (CDER) has requested execution of the Cohort Identification and Descriptive Analysis (CIDA) tool [13.1.2] to investigate the use of DPP-4 inhibitors (DPP4i), SGLT-2 inhibitors (SGLT2i), DPP4i/SGLT2i, GLP-1 agonists (GLP1a), and GIP/GLP-1 agonists (GIP/GLP1a) in the Sentinel Distributed Database (SDD).

Query period: 01/01/2008 - Most Recent
Coverage requirement: Medical & Drug Coverage
Pre-index enrollment requirement: 365 days
Post-index requirement: None
Enrollment gap: 45 days
Age groups: ***Stratification:*** <18, 18-24, 25-34, 35-44, 45-64, 65+. ***Descriptive:*** <12, 12-17, 18-24, 25-34, 35-44, 45-54, 55-64,
Stratifications for scenarios 1-5 only: Age group (<18, 18-24, 25-34, 35-44, 45-64, 65+), sex, T1D, T2D, and obesity
Censor output categorization: N/A
Restrictions: F, M sex only. Include research-eligible population
Distribution of index-defining codes: Yes
Envelope macro: Reclassify encounters during inpatient stay as inpatient
Freeze data: No

		Exposure						
Scenario	**Group**	**Index Exposure**	**Cohort definition**	**Incident exposure washout period**	**Exclude evidence of days supply if exposure washout includes dispensings**	**Treatment episode gap & extension**	**Code type**	**Censor treatment episode at evidence of:**
1	dpp	DPP-4 inhibitors	Include all valid exposure episodes	-365	Evidence of days supply	None	Rx	• Death • DP end date • Query end date
2	sglt	SGLT-2 inhibitors	Include all valid exposure episodes	-365	Evidence of days supply	None	Rx	• Death • DP end date • Query end date

Appendix F. Specifications Defining Parameters in This Request

The Center for Drug Evaluation and Research (CDER) has requested execution of the Cohort Identification and Descriptive Analysis (CIDA) tool [13.1.2] to investigate the use of DPP-4 inhibitors (DPP4i), SGLT-2 inhibitors (SGLT2i), DPP4i/SGLT2i, GLP-1 agonists (GLP1a), and GIP/GLP-1 agonists (GIP/GLP1a) in the Sentinel Distributed Database (SDD).

		Exposure						
Scenario	**Group**	**Index Exposure**	**Cohort definition**	**Incident exposure washout period**	**Exclude evidence of days supply if exposure washout includes dispensings**	**Treatment episode gap & extension**	**Code type**	**Censor treatment episode at evidence of:**
3	dpp_sglt	DPP-4/SGLT-2 inhibitors	Include all valid exposure episodes	-365	Evidence of days supply	None	Rx	• Death • DP end date • Query end date • Disenrollment
4	glp	GLP-1 agonists	Include all valid exposure episodes	-365	Evidence of days supply	None	Rx	• Death • DP end date • Query end date • Disenrollment
5	gip_glp	GIP/GLP-1 agonists	Include all valid exposure episodes	-365	Evidence of days supply	None	Rx	• Death • DP end date • Query end date • Disenrollment

Appendix F. Specifications Defining Parameters in This Request

The Center for Drug Evaluation and Research (CDER) has requested execution of the Cohort Identification and Descriptive Analysis (CIDA) tool [13.1.2] to investigate the use of DPP-4 inhibitors (DPP4i), SGLT-2 inhibitors (SGLT2i), DPP4i/SGLT2i, GLP-1 agonists (GLP1a), and GIP/GLP-1 agonists (GIP/GLP1a) in the Sentinel Distributed Database (SDD).

		Exposure						
Scenario	**Group**	**Index Exposure**	**Cohort definition**	**Incident exposure washout period**	**Exclude evidence of days supply if exposure washout includes dispensings**	**Treatment episode gap & extension**	**Code type**	**Censor treatment episode at evidence of:**

Appendix F. Specifications Defining Parameters in This Request								
The Center for Drug Evaluation and Research (CDER) has requested execution of the Cohort Identification and Descriptive Analysis (CIDA) tool [13.1.2] to investigate the use of DPP-4 inhibitors (DPP4i), SGLT-2 inhibitors (SGLT2i), DPP4i/SGLT2i, GLP-1 agonists (GLP1a), and GIP/GLP-1 agonists (GIP/GLP1a) in the Sentinel Distributed Database (SDD).								
		Exposure						
Scenario	**Group**	**Index Exposure**	**Cohort definition**	**Incident exposure washout period**	**Exclude evidence of days supply if exposure washout includes**	**Treatment episode gap & extension**	**Code type**	**Censor treatment episode at evidence of:**

Appendix G. Specifications Defining Baseline Characteristics in This Request

Baseline Characteristics

Covariate #	Covariate	Definition	Categories	Care setting	Principal diagnosis position	Code Category	Eval. period start	Eval. period end	Exclude evidence of days supply if covariate includes dispensings	# of instances the covariate should be found in eval. period
--	Age group for descriptive tables	--	<12, 12-17, 18-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75+	--	--	--	0	0	--	--
--	Age group for stratification	--	<18, 18-24, 25-34, 35-44, 45-64, 65+	--	--	--	0	0	--	--
--	Recorded Sex	--	F, M	--	--	--	0	0	--	--
--	Index Year	--	2008, 2009, … 2024	--	--	--	0	0	--	--
1	T1DM, >50% of code days	>50% DM code days are for T1DM	--	Any	Any	DX	-365	-5	--	1
2	T1DM, any codes	Presence of ≥1 T1DM codes	--	Any	Any	DX	-365	-1	--	1
3	T2DM, any codes	Presence of ≥1 T2DM codes	--	Any	Any	DX	-365	-1	--	1
4	T2DM subgroup (≥1 T2DM code + absence of T1DM codes)	covar3 and NOT covar2	--	Any	Any	DX	-365	-1	--	1
5	Obesity	Any obesity diagnosis code	--	Any	Any	DX	-365	-1	--	1
10	Weight loss procedures	Any weight loss surgery or procedure code	--	Any	Any	**PX**	-365	-1	--	1
11	BMI <20	<20 kg/m^2	--	Any	Any	DX	-365	-1	--	1
	BMI 20-24	20 to 24 kg/m^2	--	Any	Any	DX	-365	-1	--	1
1	BMI 25-29	25 to 29 kg/m^2	--	Any	Any	DX	-365	-1	--	1
2	BMI 30-39	30 to 39 kg/m^2		Any	Any	DX	-365	-1	--	1
3	BMI 40-69	40 to 69 kg/m^2		Any	Any	DX	-365	-1	--	1

Appendix G. Specifications Defining Baseline Characteristics in This Request

Baseline Characteristics

Covariate #	Covariate	Definition	Categories	Care setting	Principal diagnosis position	Code Category	Eval. period start	Eval. period end	Exclude evidence of days supply if covariate includes dispensings	# of instances the covariate should be found in eval. period
4	BMI ≥70	≥70 kg/m^2	--	Any	Any	DX	-365	-1	--	1
5	Hypertension	see code list	--	Any	Any	DX	-365	-1	--	1
6	Hyperlipidemia	see code list	--	Any	Any	DX	-365	-1	--	1
7	Ischemic heart disease	see code list	--	Any	Any	DX	-365	-1	--	1
8	Cerebrovascular disease	see code list	--	Any	Any	DX	-365	-1	--	1
9	Peripheral vascular disease	see code list	--	Any	Any	DX	-365	-1	--	1
10	Heart failure	see code list	--	Any	Any	DX	-365	-1	--	1
11	Obstructive sleep apnea	see code list	--	Any	Any	DX	-365	-1	--	1
12	Chronic kidney disease	see code list	--	Any	Any	DX	-365	-1	--	1
13	Dialysis	see code list	--	Any	Any	DX, PX	-365	-1	--	1
14	Smoking	see code list	--	Any	Any	DX, PX, RX	-365	-1	--	1
15	Concurrent use of metformin	see code list	--	Any	Any	RX	-365	-1	Evidence of days supply	1
16	Concurrent use of sulfonylurea	see code list	--	Any	Any	RX	-365	-1	Evidence of days supply	1
17	Concurrent use of thiazolidinedione	see code list	--	Any	Any	RX	-365	-1	Evidence of days supply	1
18	Concurrent use of long/intermediate acting insulin	see code list	--	Any	Any	RX, PX	-365	-1	Evidence of days supply	1

Appendix G. Specifications Defining Baseline Characteristics in This Request

Baseline Characteristics

Covariate #	Covariate	Definition	Categories	Care setting	Principal diagnosis position	Code Category	Eval. period start	Eval. period end	Exclude evidence of days supply if covariate includes dispensings	# of instances the covariate should be found in eval. period
19	Concurrent use of short/rapid acting insulin	see code list	--	Any	Any	RX, PX	-365	-1	Evidence of days supply	1
20	Concurrent use of combination insulin	see code list	--	Any	Any	RX, PX	-365	-1	Evidence of days supply	1
21	Concurrent use of alpha-glucosidase inhibitor	see code list	--	Any	Any	RX	-365	-1	Evidence of days supply	1
22	Concurrent use of meglitinides	see code list	--	Any	Any	RX	-365	-1	Evidence of days supply	1
23	Concurrent use of DPP4i	see code list	--	Any	Any	RX	-365	-1	Evidence of days supply	1
24	Concurrent use of SGLT2i	see code list	--	Any	Any	RX	-365	-1	Evidence of days supply	1
25	Concurrent use of other oral diabetes drug	includes bromocriptine and colesevelam; see code list	--	Any	Any	RX	-365	-1	Evidence of days supply	1
	COVARS38-41: T1DM by Obesity Cross-Classification									
26	*T1DM only (no obesity)*	*covar1 and NOT covar5*	--	Any	Any	DX	-365	-1	--	1
27	*Obesity only (no T1DM)*	*covar5 and NOT covar1*	--	Any	Any	DX	-365	-1	--	1
28	*T1DM and Obesity*	*covar1 and covar5*	--	Any	Any	DX	-365	-1	--	1
29	*Neither T1DM nor obesity*	*NOT covar1 and NOT covar5*	--	Any	Any	DX	-365	-1	--	1
	COVARS6-9: T2DM by Obesity Cross-Classification									

Appendix G. Specifications Defining Baseline Characteristics in This Request

Baseline Characteristics

Covariate #	Covariate	Definition	Categories	Care setting	Principal diagnosis position	Code Category	Eval. period start	Eval. period end	Exclude evidence of days supply if covariate includes dispensings	# of instances the covariate should be found in eval. period
6	*T2DM only (no obesity)*	*covar4 and NOT covar5*	--	Any	Any	DX	-365	-1	--	1
7	*Obesity only (no T2DM)*	*covar5 and NOT covar4*	--	Any	Any	DX	-365	-1	--	1
8	*T2DM and Obesity*	*covar4 and covar5*	--	Any	Any	DX	-365	-1	--	1
9	*Neither T2DM nor obesity*	*NOT covar4 and NOT covar5*	--	Any	Any	DX	-365	-1	--	1

Appendix H. Specifications Defining Medical and Drug Utilization, Stockpiling, and Risk Scores in This Request

Utilization

Medical utilization evaluation period start	Medical utilization evaluation period end	Medical visit care settings	Drug utilization evaluation period end	Drug utilization metrics
-365	-1	IP; IS; ED; AV; OA	-1	Dispensings; Generics; Unique drug classes

Stockpiling

Stockpiling group	Same day dispensing processing for days supplied	Same day dispensing processing for amount supplied	Range of allowable amount supplied values	Overlap percentage
Scenarios 1-5: Stockpile by exposure group **Scenario 6: Stockpile by generic name** **Scenarios 7-12: Stockpile by brand**	**Uses maximum days supplied value for dispensings in the same GROUP/ STOCKGROUP on the same day**	Default: Adds all amount values for dispensings in the same stockgroup on the same day	Default: Does not consider days supplied values of 0 or less	Default: No truncation will occur and any overlap of supply between dispensing will be corrected by pushing overlapping days supplied forward

Risk Score

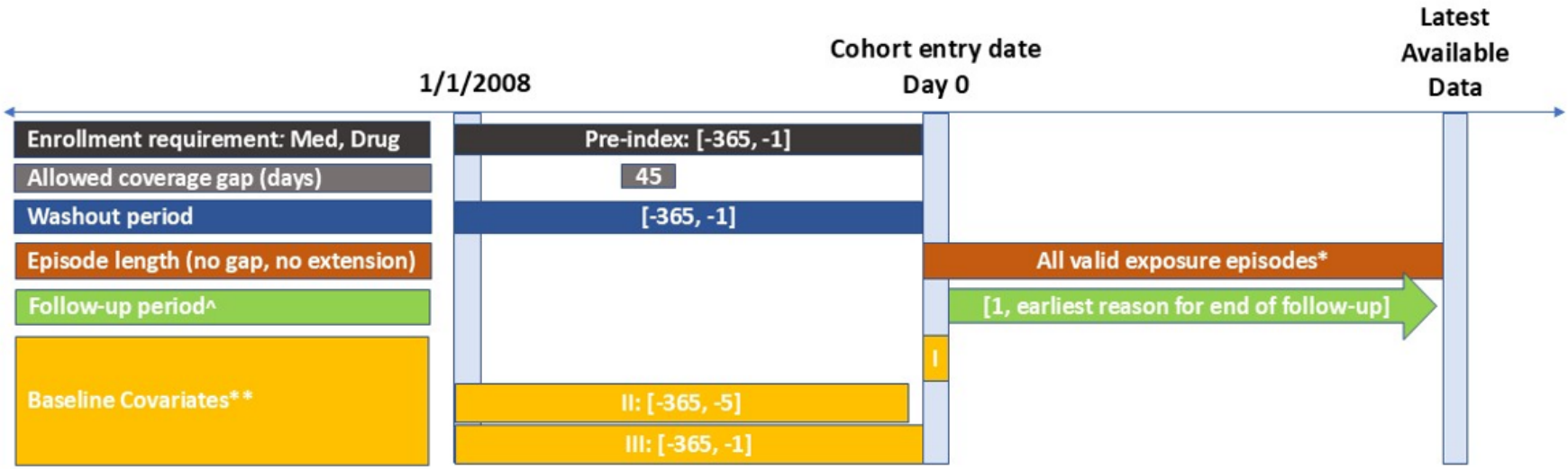
Risk Score	Evaluation Period Start	Evaluation Period End	Anchor Date to End Risk Score Evaluation	Risk Score Categories
	-365	-1	N/A	<1, 1, 2, 3+
*Adapted Diabetes Complications Severity Index[1]	-365	-1	N/A	0, 1, 2, 3+
*Frailty Index[2]	-365	-1	N/A	≥0.25 (Frail) <0.25 (Not frail)

[1]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.

[2]Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring Frailty in Medicare Data: Development and Validation of a Claims-Based Frailty Index. J Gerontol Ser A. 2018;73(7):980-987.

Appendix H. Design Diagram

Utilization of DPP-4i, SGLT-2i, DPP4i/SGLT2i, GLP-1ra, and GIP/GLP-1ra



* This query assessed the utilization of DPP-4i, SGLT-2i, DPP4i/SGLT2i, GLP-1ra, GIP/GLP-1ra, canagliflozin, Saxenda, Ozempic, Wegovy, Rybelsus, Mounjaro, and Zepbound. Subsequent exposure episodes after the first were not required to meet new use criteria.

^ **The follow up period** begins on the day after the index date and ends at the earliest occurrence of disenrollment; Data Partner end date; query end date; death.

** **Baseline Covariates:** Window I: Age, sex, race, ethnicity, calendar year of drug initiation. Window II: T1DM (>50% of code days are for T1DM rather than T2DM). Window III: T1DM (any codes), T2DM (any codes), T2DM (≥1 T2DM code + absence of T1DM codes), Obesity, Obesity and T2DM cross-classification [T2DM only (no obesity), Obesity only (no T2DM), T2DM and Obesity, Neither T2DM nor obesity], Obesity and T1DM cross-classification [T1DM only (no obesity), Obesity only (no T1DM), T1DM and Obesity, Neither T1DM nor obesity], Weight loss procedures, BMI <20, BMI 20-24, BMI 25-29, BMI 30-39, BMI 40-69, BMI ≥70, Hypertension, Hyperlipidemia, Ischemic heart disease, Cerebrovascular disease, Peripheral vascular disease, Heart failure, Obstructive sleep apnea, Chronic kidney disease, Dialysis, Smoking, Metformin, Sulfonylurea, Thiazolidinedione, Long/intermediate acting insulin, Short/rapid acting insulin, Combination insulins, Alpha-glucosidase inhibitor, Meglitinides, DPP4i, SGLT2i, Other oral diabetes drug (bromocriptine or colesevelam), Combined Comorbidity Score (CCI), adapted Diabetes Complications Severity Index (aDSCI), Kim Frailty index

DPP-4i = dipeptidyl peptidase-4 inhibitors; GIP = glucose-dependent insulinotropic polypeptide; GLP-1ra = glucagon-like peptide-1 receptor agonist; SGLT-2i = sodium-glucose cotransporter-2 inhibitors; T1DM = type 1 diabetes mellitus; T2DM = type 2 diabetes mellitus.