



## 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. If you are using a web page screen reader and are unable to access this document, please contact the Sentinel Operations Center for assistance at [info@sentinelssystem.org](mailto:info@sentinelssystem.org).

## Overview for Request cder\_mpl2r\_wp011

**Request ID:** cder\_mpl2r\_wp011\_nsdv\_v01

**Request Description:** The goal of this request was to assess the risk of acute myocardial infarction (AMI) and hospitalized heart failure (hHF) following saxagliptin or sitagliptin use in comparison to one another, to long-acting insulins, to pioglitazone, and to second-generation sulfonylureas in the Sentinel Distributed Database (SDD).

The request had two components: the “replication” analysis aimed to recreate the final analysis from a protocol-based assessment (PBA) of these diabetes drug exposures and health outcomes, while the “updated” analysis featured the same drug comparisons and outcomes but was run on the latest available data and accounted for present-day drugs and analysis tool capabilities.<sup>1,2,3</sup>

Following is a list of reports for the “updated” analysis. The report contained in this file is bolded.

Report 1 investigates AMI incidence among new users of saxagliptin and comparator drugs under "updated" analytic conditions.

Report 2 investigates AMI incidence among new users of sitagliptin and comparator drugs under "updated" analytic conditions.

**Report 3 investigates hHF incidence among new users of saxagliptin and comparator drugs under "updated" analytic conditions.**

Report 4 investigates hHF incidence among new users of sitagliptin and comparator drugs under "updated" analytic conditions.

**Sentinel Routine Querying Module:** Cohort Identification and Descriptive Analysis (CIDA) module, with Propensity Score Analysis, version 7.3.4

**Data Source:** We used data from August 1, 2009 - September 30, 2015 from 16 Data Partners contributing to the SDD. We distributed this request on July 29, 2019. See Appendix A for a list of dates of available data for each Data Partner.

**Study Design:** This query used a retrospective new-user cohort design. We reported effect estimates for overall populations and for subgroups defined by prior diagnosis of cardiovascular disease (CVD) status, sex, and age group.

**Exposures of Interest:** The five exposures of interest for this report were paired below into four comparisons. We defined each exposure using National Drug Codes (NDCs). Please see Appendix B for generic names of medical products used to define exposures in this request.

Comparison 1: Saxagliptin vs. sitagliptin

Comparison 2: Saxagliptin vs. pioglitazone

Comparison 3: Saxagliptin vs. long-acting insulins

Comparison 4: Saxagliptin vs. second-generation sulfonylureas

**Cohort Eligibility Criteria:** We included individuals in our analysis if they were continuously enrolled in health plans with medical and drug coverage for at least 365 days prior to their first qualifying (index) dispensing date, during which gaps in coverage of up to 45 days were allowed. We excluded members who had claims (NDCs) indicating use of either saxagliptin or the comparator drug in the 365 days prior to their index date. Generic names of medical products for incidence criteria are shown in Appendix B. We restricted our analysis to patients classified as male or female sex (excluding “other” and “missing”) who were at least 18 years of age at index. We reported outcomes according to the following age categories: 18-29, 30-44, 45-54, 55-64, 65-74, 75-84, and 85 years or greater. This analysis captured only the first valid index date during the query period.

## Overview for Request cder\_mpl2r\_wp011

**Inclusion and Exclusion Criteria:** For all comparisons, we included patients with either a diabetes diagnosis or a non-short-acting insulin diabetes medication dispensing in the 365 days prior to the index dispensing date. We excluded patients with gestational diabetes, defined as a female patient with a diagnosis signaling pregnancy (such as delivery, miscarriage, or ongoing pregnancy) on the index date or in the 365 days prior to index date (in addition to the aforementioned diabetes diagnosis inclusion criterion). For the pioglitazone comparison only, we additionally excluded individuals with evidence of congestive heart failure in the 365 days prior to index. For the long-acting insulin comparison only, we additionally excluded patients with no diabetes medication other than short-acting insulin in the 365 days prior to index. We defined all inclusion and exclusion criteria using International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) diagnosis codes and National Drug Codes (NDCs). Please see Appendix C for a list of diagnosis codes and Appendix D for generic names of medical products used to define inclusions and exclusions in this request.

**Stockpiling Algorithm:** For same-day dispensings of the same stockpiling group, we set the number of days supplied to equal the sum of days supplied over these dispensings. We handled the amount supplied value for same-day dispensings in the same way. In situations where a dispensing occurred during the supply period for the previous dispensing, we pushed forward the date of this dispensing as if there were no overlap between consecutive dispensing's days supplied. Finally, we only allowed a dispensing to contribute a maximum of 120 days to an episode.

**Follow-Up Time:** Follow-up time began on the date of first dispensing and continued for the duration of the exposure episode. We defined exposure episode length using outpatient pharmacy dispensings' days supplied values to create a sequence of continuous exposure. We considered exposure episodes to be continuous across dispensings if gaps in days supplied were less than 33% of the previous dispensing length. Follow-up continued until the last day supplied plus a 12-day extension period, or until the first occurrence of any of the following: 1) disenrollment; 2) death; 3) the end of the query period; 4) the outcome of interest; or 5) use of the comparison drug.

**Outcome of Interest:** The outcome of interest for this was hHF. We defined the outcome as a primary diagnosis in an inpatient (IP) encounter using ICD-9-CM discharge diagnosis codes. We excluded patients from the analysis if they had a primary diagnosis of hHF or AMI in an IP encounter in the 60 days prior to their index date. See Appendix E for a list of ICD-9-CM diagnosis codes used to define hHF and AMI in this request.

**Patient Characteristics:** We generated covariates for three purposes: 1) to describe the characteristics of our analytic cohorts; 2) to include in our propensity score (PS) model; and 3) to define subgroups for stratified analyses by presence of prior CVD conditions. We defined the baseline period for descriptive variables as the 365 days prior to the exposure of interest, not including the index date, except in describing prior AMI, prior hHF, and prior encounters (see details below). We also reported concurrent use of drugs, defined as evidence of use on index date.

### Descriptive and propensity score, baseline only

We assessed the following covariates during only the baseline period and included them in our PS models: age, sex, year of treatment initiation, Combined Comorbidity Index<sup>4</sup>, prior AMI in the past 61-365 days (narrow definition), other ischemic heart disease, congestive heart failure, other heart disease, stroke (broad definition), stroke (narrow definition), peripheral arterial disease, coronary revascularization procedures (defined as coronary artery bypass graft or percutaneous coronary intervention), carotid revascularization procedures (defined as carotid bypass or carotid endarterectomy, stenting, angioplasty or atherectomy), lower extremity revascularization (defined as lower extremity bypass, lower extremity amputation, lower extremity endarterectomy, stenting, angioplasty or atherectomy), asthma, cancer (excluding non-melanoma skin cancer), chronic kidney disease (excluding end-stage renal disease), chronic obstructive pulmonary disease, dementia, depression, end-stage renal disease, fracture, human immunodeficiency virus or acquired immunodeficiency syndrome, hyperlipidemia or lipid disorder, hypertension, hypoglycemia, obesity (or weight gain), osteoporosis, peripheral neuropathy, tobacco use, non-acute institutional stay (IS encounter) in prior year, any hospitalization (IP encounter) within prior 30 days, any hospitalization within past 31-365 days, any emergency department (ED encounter) visit within prior 30 days, any emergency department visit within prior 31-365 days, number of outpatient visits (AV encounter) in prior year, and number of unique medications dispensed in prior year.

## Overview for Request cder\_mpl2r\_wp011

### Descriptive and propensity score, baseline and concurrent use

We assessed the following drug use covariates during the baseline period and, separately, on index date only. We included both baseline and index values of these variables in our PS models: alpha-glucosidase inhibitors, biguanides, other dipeptidyl peptidase-4 (DPP-4) inhibitors, meglitinides, saxagliptin, sitagliptin, pioglitazone, first-generation sulfonylureas, second-generation sulfonylureas, long-acting insulin, short-acting insulin, other thiazolidinediones, other anti-diabetics (defined as glucagon-like peptide-1 (GLP-1) analogues, amylin analog-types or canagliflozin), angiotensin-converting enzyme (ACE) inhibitors, alpha blockers, angiotensin receptor blockers (ARB), beta blockers, calcium channel blockers, direct vasodilators, loop diuretics, aldosterone receptor agonists (ARAs), non-ARA potassium sparing diuretics, thiazide diuretics, renin inhibitors, central alpha-2 receptor agonists, reserpine and derivatives, and lipid-lowering agents. We included in each PS model all exposure drugs of interest other than the treatment and comparator under assessment. For example, the PS model for the saxagliptin versus long-acting insulin comparison included sitagliptin, pioglitazone, and second-generation sulfonylureas, but not long-acting insulins. Saxagliptin is an exception to this, and its handling is detailed below.

Additionally, we grouped a selection of antidiabetic agents into two aggregate “other anti-diabetics” variables based on the previous PBA, one describing use during the baseline period and one describing use on index day. We included both variables in our PS model. These aggregate variables included: alpha-glucosidase inhibitors, other DPP-4 inhibitors, meglitinides, first-generation sulfonylureas, saxagliptin, and other anti-diabetics (defined as GLP-1 analogues, amylin analog-types or canagliflozin). In analyses where saxagliptin was an exposure of interest, we did not include saxagliptin in the definitions of “other anti-diabetics” at baseline or at index.

Similarly, we identified use of the following anti-hypertensive drugs and grouped them into two aggregate variables, one describing use during the baseline period and one describing use on index day. We included both variables in our PS model. The aggregate variables include: central alpha-2 receptor agonists, alpha blockers, ARAs, potassium sparing diuretics, loop diuretics, direct vasodilators, renin inhibitors, reserpine and derivatives, and direct vasodilators.

### Descriptive only, baseline only

We assessed the following descriptive variables during the baseline period only and did not include them in PS models: each of the components that make up coronary revascularization procedures, carotid revascularization procedures, lower extremity revascularization procedures covariates, aggregate of all cardiovascular disease covariates previously listed, aggregate of all comorbidity covariates previously listed, aggregates of all anti-diabetic medication in the baseline period and on index day, aggregates of all anti-hypertensive agents in the baseline period and on index day, prior AMI in the previous 61 to 365 days (broad definition), and prior hHF in the previous 61 to 365 days.

### Prior CVD subgroups

We classified patients into “presence of prior CVD” and “no prior CVD” subgroups for stratified analyses. We defined presence of prior CVD conditions according to the following variables, assessed during the baseline period of 365 days prior to the exposure of interest: prior AMI (broad), other ischemic heart disease, heart failure, other heart disease, stroke (broad), peripheral arterial disease, all coronary revascularization procedures, all carotid revascularization procedures, and all lower extremity revascularization.

### Care settings

We captured diagnoses and procedures from IP or ambulatory visit (AV) care settings, except for stroke (narrow definition), AMI (narrow definition), and hHF, which required a principal diagnosis in the IP care setting.

### Codes

We defined all conditions using ICD-9-CM diagnosis and procedure codes, Healthcare Common Procedure Coding System (HCPCS) codes, and Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III) codes. We defined drug dispensings using NDCs. Please see Appendix F for a list of diagnosis and procedure codes and Appendix G for generic names of medical products used to identify covariates in this request.

### Overview for Request cder\_mpl2r\_wp011

**Analysis:** We estimated propensity scores using the covariates listed above, and adjusted our analytic models via PS matching using 1:1 nearest neighbor matching without replacement using a caliper of 0.01. Each comparator patient was matched one time, at most, to a treatment patient. We estimated adjusted hazard ratios and 95% confidence intervals using Cox regression stratified on Data Partner site (and matched sample in the conditional analysis). We performed subgroup analyses by prior CVD status, sex, and age group (18-64 years, 65 or older). In subgroup analyses, we re-matched patients within subgroups.

**Please see Appendices H.1-H.8 for the specifications of parameters for this request and Appendix I for the list of covariates and their use in the PS models and subgroup definition. Note that only comparisons 8 through 11 apply to this report.**

**Limitations:** 1) As with all observational studies, this evaluation was limited in its ability to control for all sources of potential bias. 2) Exposures, outcomes, inclusions, exclusions, episode truncation criteria, and covariates may be misclassified due to imperfect identification algorithms.

**Notes:** Please contact the Sentinel Operations Center ([info@sentinelssystem.org](mailto:info@sentinelssystem.org)) for questions and to provide comments/suggestions for future enhancements to this document.

<sup>1</sup>Toh S, Reichman M, Graham D, Hampp C, Zhang R, Butler M, Iyer A, Rucker M, Pimentel M, Hamilton J, Lendle S, Fireman B. Prospective Postmarketing Surveillance of Acute Myocardial Infarction in New Users of Saxagliptin: A Population-Based Study. *Diabetes Care* 2018;41:39-48

<sup>2</sup>Toh S, Hampp C, Reichman M, Graham D, Balakrishnan S, Pucino F, Hamilton J, Lendle S, Iyer A, Rucker M, Pimentel M, Nathwani N, Griffin M, Brown N, Fireman B. Risk for Hospitalized Heart Failure Among New Users of Saxagliptin, Sitagliptin, and Other Antihyperglycemic Drugs: A Retrospective Cohort Study. *Ann Intern Med*. 2016;164:705-714.

<sup>3</sup>Fireman B, Toh S, Butler M, Go A, Joffe H, Graham D, Nelson J, Daniel G, Selby J. A protocol for active surveillance of acute myocardial infarction in association with the use of a new antidiabetic pharmaceutical agent. *Pharmacoepidemiol Drug Saf*. 2012 Jan; 21 Suppl 1: 282-90.

<sup>4</sup>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

## Table of Contents

<b><u>Glossary (CIDA)</u></b>	List of Terms related to the Cohort Identification and Descriptive Analysis (CIDA) Tool found in this Report and their Definitions
<b><u>Glossary (PSA)</u></b>	List of Terms related to the Propensity Score Analysis (PSA) Tool found in this Report and their Definitions
<b><u>Table 1a</u></b>	Baseline Characteristics of New Users of Saxagliptin vs New Users of Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01
<b><u>Table 1b</u></b>	Baseline Characteristics of New Users of Saxagliptin vs New Users of Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01
<b><u>Table 1c</u></b>	Baseline Characteristics of New Users of Saxagliptin vs New Users of Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01
<b><u>Table 1d</u></b>	Baseline Characteristics of New Users of Saxagliptin vs New Users of Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01
<b><u>Table 1e</u></b>	Baseline Characteristics of New Users of Saxagliptin vs New Users of Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01
<b><u>Table 1f</u></b>	Baseline Characteristics of New Users of Saxagliptin vs New Users of Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01
<b><u>Table 1g</u></b>	Baseline Characteristics of New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01
<b><u>Table 1h</u></b>	Baseline Characteristics of New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01
<b><u>Table 2</u></b>	Effect Estimates for New Users of Saxagliptin vs New Users of Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type
<b><u>Table 3</u></b>	Effect Estimates for New Users of Saxagliptin vs New Users of Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type and Prior Cardiovascular Disease Status
<b><u>Table 4</u></b>	Effect Estimates for New Users of Saxagliptin vs New Users of Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type and Sex
<b><u>Table 5</u></b>	Effect Estimates for New Users of Saxagliptin vs New Users of Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type and Age Group
<b><u>Table 6</u></b>	Effect Estimates for New Users of Saxagliptin vs New Users of Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type

## Table of Contents

<b><u>Table 7</u></b>	Effect Estimates for New Users of Saxagliptin vs New Users of Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type and Prior Cardiovascular Disease Status
<b><u>Table 8</u></b>	Effect Estimates for New Users of Saxagliptin vs New Users of Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type and Sex
<b><u>Table 9</u></b>	Effect Estimates for New Users of Saxagliptin vs New Users of Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type and Age Group
<b><u>Table 10</u></b>	Effect Estimates for New Users of Saxagliptin vs New Users of Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type
<b><u>Table 11</u></b>	Effect Estimates for New Users of Saxagliptin vs New Users of Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type and Prior Cardiovascular Disease Status
<b><u>Table 12</u></b>	Effect Estimates for New Users of Saxagliptin vs New Users of Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type and Sex
<b><u>Table 13</u></b>	Effect Estimates for New Users of Saxagliptin vs New Users of Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type and Age Group
<b><u>Table 14</u></b>	Effect Estimates for New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type
<b><u>Table 15</u></b>	Effect Estimates for New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type and Prior Cardiovascular Disease Status
<b><u>Table 16</u></b>	Effect Estimates for New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type and Sex
<b><u>Table 17</u></b>	Effect Estimates for New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type and Age Group
<b><u>Figure 1a</u></b>	Propensity Score Distributions for New Users of Saxagliptin and Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015 (Updated), Unmatched, Aggregated
<b><u>Figure 1b</u></b>	Propensity Score Distributions for New Users of Saxagliptin and Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015 (Updated), Matched, Aggregated
<b><u>Figure 2a</u></b>	Propensity Score Distributions for New Users of Saxagliptin and Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015 (Updated), Unmatched, Aggregated
<b><u>Figure 2b</u></b>	Propensity Score Distributions for New Users of Saxagliptin and Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015 (Updated), Matched, Aggregated

## Table of Contents

<b><u>Figure 3a</u></b>	Propensity Score Distributions for New Users of Saxagliptin and Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015 (Updated), Unmatched, Aggregated
<b><u>Figure 3b</u></b>	Propensity Score Distributions for New Users of Saxagliptin and Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015 (Updated), Matched, Aggregated
<b><u>Figure 4a</u></b>	Propensity Score Distributions for New Users of Saxagliptin and Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015 (Updated), Unmatched, Aggregated
<b><u>Figure 4b</u></b>	Propensity Score Distributions for New Users of Saxagliptin and Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015 (Updated), Matched, Aggregated
<b><u>Figure 5</u></b>	Kaplan Meier Survival Curves for Hospitalized Heart Failure Among New Users of Saxagliptin vs New Users of Sitagliptin in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015 (Updated), Unconditional Matched Cohort
<b><u>Figure 6</u></b>	Kaplan Meier Survival Curves for Hospitalized Heart Failure Among New Users of Saxagliptin vs New Users of Pioglitazone in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015 (Updated), Unconditional Matched Cohort
<b><u>Figure 7</u></b>	Kaplan Meier Survival Curves for Hospitalized Heart Failure Among New Users of Saxagliptin vs New Users of Long-Acting Insulins in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015 (Updated), Unconditional Matched Cohort
<b><u>Figure 8</u></b>	Kaplan Meier Survival Curves for Hospitalized Heart Failure Among New Users of Saxagliptin vs New Users of Sulfonylureas in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015 (Updated), Unconditional Matched Cohort
<b><u>Appendix A</u></b>	Dates of Available Data for Each Data Partner (DP) as of Request End Date (July 31, 2014)
<b><u>Appendix B</u></b>	List of Generic Names of Medical Products Used to Define Exposure and Incidence Criteria in this Report
<b><u>Appendix C</u></b>	List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report
<b><u>Appendix D</u></b>	List of Generic Names of Medical Products Used to Define Inclusion and Exclusion Criteria in this Report
<b><u>Appendix E</u></b>	List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Outcome and Outcome Incidence Criteria in this Report
<b><u>Appendix F</u></b>	List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report
<b><u>Appendix G</u></b>	List of Generic Names of Medical Products Used to Define Covariates in this Report
<b><u>Appendix H.1</u></b>	Specifications for Parameters in this Request, Comparison 1; Saxagliptin vs Sitagliptin, Comparison 2; Saxagliptin vs Pioglitazone
<b><u>Appendix H.2</u></b>	Specifications for Parameters in this Request, Comparison 3; Saxagliptin vs Long-acting insulins, Comparison 4; Saxagliptin vs Second-generation sulfonylureas
<b><u>Appendix H.3</u></b>	Specifications for Parameters in this Request, Comparison 5; Sitagliptin vs Pioglitazone, Comparison 6; Sitagliptin vs Long-acting insulins

## Table of Contents

<b><u>Appendix H.4</u></b>	Specifications for Parameters in this Request, Comparison 7; Sitagliptin vs Second-generation sulfonylureas
<b><u>Appendix H.5</u></b>	Specifications for Parameters in this Request, Comparison 8; Saxagliptin vs Sitagliptin, Comparison 9; Saxagliptin vs Pioglitazone
<b><u>Appendix H.6</u></b>	Specifications for Parameters in this Request, Comparison 10; Saxagliptin vs Long-acting insulins, Comparison 11; Saxagliptin vs Second-generation sulfonylureas
<b><u>Appendix H.7</u></b>	Specifications for Parameters in this Request, Comparison 12; Sitagliptin vs Pioglitazone, Comparison 13; Sitagliptin vs Long-acting insulins
<b><u>Appendix H.8</u></b>	Specifications for Parameters in this Request, Comparison 14; Sitagliptin vs Second-generation sulfonylureas
<b><u>Appendix I</u></b>	List and Definition of Covariates Appearing in Table 1, Propensity Score Model (PSM), or Subgroup Definition in All Comparisons, All Analyses and Outcomes

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**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.

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

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

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

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

\*all terms may not be used in this report

## Glossary of Terms for Analyses Using Propensity Score Analysis (PSA) Tool\*

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

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

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

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

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

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

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

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

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

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

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

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

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

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

\*all terms may not be used in this report

**Table 1a. Baseline Characteristics of New Users of Saxagliptin vs New Users of Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Sitagliptin		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Patients	184,312	100.0%	824,877	100.0%	-	-
<b>Demographics<sup>1</sup></b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Mean</b>	<b>Standard Deviation</b>		
Mean age (years)	65.4	10.9	66.8	11.7	-1.478	-0.130
Age (years)						
18-29	907	0.5%	3,656	0.4%	0.049	0.007
30-44	12,994	7.1%	49,253	6.0%	1.079	0.044
45-54	27,809	15.1%	107,766	13.1%	2.024	0.058
55-64	37,744	20.5%	155,962	18.9%	1.571	0.040
65-74	61,033	33.1%	280,995	34.1%	-0.951	-0.020
75-84	34,489	18.7%	171,105	20.7%	-2.031	-0.051
85+	9,336	5.1%	56,140	6.8%	-1.741	-0.074
Sex						
Female	94,006	51.0%	435,781	52.8%	-1.826	-0.037
Male	90,306	49.0%	389,096	47.2%	1.826	0.037
Race						
American Indian or Alaska Native	995	0.5%	4,424	0.5%	0.004	0.000
Asian	5,393	2.9%	27,306	3.3%	-0.384	-0.022
Black or African American	16,505	9.0%	88,879	10.8%	-1.820	-0.061
Native Hawaiian or Other Pacific Islander	191	0.1%	1,284	0.2%	-0.052	-0.014
Unknown	68,149	37.0%	248,206	30.1%	6.885	0.146
White	93,079	50.5%	454,778	55.1%	-4.632	-0.093
Year						
2009	1,196	0.6%	19,387	2.4%	-1.701	-0.140
2010	11,583	6.3%	44,937	5.4%	0.837	0.036
2011	55,074	29.9%	178,217	21.6%	8.276	0.190
2012	47,260	25.6%	173,689	21.1%	4.585	0.109
2013	31,693	17.2%	139,074	16.9%	0.335	0.009
2014	23,539	12.8%	152,574	18.5%	-5.725	-0.158
2015	13,967	7.6%	116,999	14.2%	-6.606	-0.213
<b>Recorded history of:</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Mean</b>	<b>Standard Deviation</b>		
Prior combined comorbidity raw score	1.4	2.4	1.9	2.8	-0.476	-0.183
	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>		
Acute myocardial infarction prior to 60 days before index date (broad)	2,418	1.3%	13,912	1.7%	-0.375	-0.031
Acute myocardial infarction prior to 60 days before index date (narrow)	996	0.5%	5,472	0.7%	-0.123	-0.016
Acute myocardial infarction (broad)	2,740	1.5%	16,743	2.0%	-0.543	-0.041

**Table 1a. Baseline Characteristics of New Users of Saxagliptin vs New Users of Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Sitagliptin		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Hospitalized heart failure prior to 60 days before index date	1,587	0.9%	10,165	1.2%	-0.371	-0.036
Other ischemic heart disease	48,924	26.5%	236,277	28.6%	-2.100	-0.047
Congestive heart failure	19,700	10.7%	111,039	13.5%	-2.773	-0.085
Other heart disease	60,709	32.9%	293,904	35.6%	-2.692	-0.057
Stroke (broad)	18,267	9.9%	91,630	11.1%	-1.197	-0.039
Stroke (narrow)	1,110	0.6%	8,568	1.0%	-0.436	-0.048
Peripheral arterial disease	16,439	8.9%	80,771	9.8%	-0.873	-0.030
All coronary revascularization procedures	14,897	8.1%	78,265	9.5%	-1.406	-0.050
Coronary artery bypass graft	7,582	4.1%	40,626	4.9%	-0.811	-0.039
Percutaneous coronary intervention	9,778	5.3%	50,975	6.2%	-0.875	-0.038
All carotid revascularization procedures	409	0.2%	2,093	0.3%	-0.032	-0.007
Carotid endarterectomy, etc.	*****	*****	*****	*****	-0.032	-0.006
Carotid bypass	*****	*****	*****	*****	0.000	-0.002
All lower extremity revascularization	1,284	0.7%	7,678	0.9%	-0.234	-0.026
Lower extremity endarterectomy, etc.	819	0.4%	4,223	0.5%	-0.068	-0.010
Lower extremity bypass	183	0.1%	1,213	0.1%	-0.048	-0.014
Lower extremity amputation	454	0.2%	3,533	0.4%	-0.182	-0.031
All Prior Cardiovascular Disease Covariates	86,803	47.1%	416,730	50.5%	-3.425	-0.069
Asthma	16,017	8.7%	79,216	9.6%	-0.913	-0.032
Cancer (excluding non-melanoma skin cancer)	17,085	9.3%	80,803	9.8%	-0.526	-0.018
Chronic kidney disease (excluding end stage renal disease)	18,627	10.1%	98,074	11.9%	-1.783	-0.057
Chronic obstructive pulmonary disease	22,901	12.4%	116,150	14.1%	-1.656	-0.049
Dementia	7,465	4.1%	48,177	5.8%	-1.790	-0.083
Depression	23,691	12.9%	126,488	15.3%	-2.480	-0.071
End stage renal disease (ESRD)	2,154	1.2%	14,342	1.7%	-0.570	-0.048
Fracture	7,773	4.2%	42,717	5.2%	-0.961	-0.045
Human immunodeficiency virus (HIV) / acquired immunodeficiency syndrome	368	0.2%	2,680	0.3%	-0.125	-0.024
Hyperlipidemia or lipid disorder	145,871	79.1%	641,466	77.8%	1.378	0.034
Hypertension	154,999	84.1%	697,417	84.5%	-0.452	-0.012
Hypoglycemia	10,576	5.7%	62,100	7.5%	-1.790	-0.072
Obesity (or weight gain)	36,996	20.1%	182,887	22.2%	-2.099	-0.051
Osteoporosis	14,326	7.8%	67,980	8.2%	-0.469	-0.017

**Table 1a. Baseline Characteristics of New Users of Saxagliptin vs New Users of Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Sitagliptin		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Peripheral neuropathy	38,946	21.1%	189,251	22.9%	-1.812	-0.044
Tobacco use	18,882	10.2%	105,029	12.7%	-2.488	-0.078
All comorbidity covariates	176,658	95.8%	789,044	95.7%	0.191	0.009
<b>History of use:</b>						
Alpha-glucosidase inhibitors (B)	1,247	0.7%	5,526	0.7%	0.007	0.001
Biguanides (B)	127,657	69.3%	567,560	68.8%	0.456	0.010
Other dipeptidyl peptidase-4 (DPP-4) inhibitors (B)	3,686	2.0%	9,904	1.2%	0.799	0.064
Glucagon-like peptide-1 (GLP-1) analogues (B)	6,960	3.8%	24,973	3.0%	0.749	0.041
Meglitinides (B)	4,025	2.2%	17,268	2.1%	0.090	0.006
Saxagliptin (B)	-	0.0%	-	0.0%	0.000	-
Sitagliptin (B)	-	0.0%	-	0.0%	0.000	-
Pioglitazone (B)	36,007	19.5%	136,315	16.5%	3.010	0.078
First-generation sulfonylureas (B)	71	0.0%	308	0.0%	0.001	0.001
Second-generation sulfonylureas (B)	85,253	46.3%	398,192	48.3%	-2.018	-0.040
Long-acting insulins (B)	28,710	15.6%	148,288	18.0%	-2.400	-0.064
Short-acting insulins (B)	11,692	6.3%	70,169	8.5%	-2.163	-0.083
Other thiazolidinediones (B)	5,059	2.7%	15,619	1.9%	0.851	0.057
Sodium-glucose cotransporter-2 (SGLT-2) inhibitors (B)	1,304	0.7%	5,813	0.7%	0.003	0.000
Amylin analog-types (B)	182	0.1%	656	0.1%	0.019	0.006
All anti-diabetics (B)	163,592	88.8%	735,989	89.2%	-0.466	-0.015
Angiotensin-converting enzyme inhibitors (B)	87,190	47.3%	404,926	49.1%	-1.784	-0.036
Alpha blockers (B)	5,440	3.0%	26,346	3.2%	-0.242	-0.014
Angiotensin receptor blockers (B)	53,422	29.0%	226,316	27.4%	1.548	0.034
Beta blockers (B)	74,013	40.2%	355,720	43.1%	-2.968	-0.060
Calcium channel blockers (B)	47,915	26.0%	234,376	28.4%	-2.417	-0.054
Direct vasodilators (B)	3,876	2.1%	22,286	2.7%	-0.599	-0.039
Loop diuretics (B)	34,271	18.6%	175,996	21.3%	-2.742	-0.069
Aldosterone receptor agonists (ARAs) (B)	6,978	3.8%	35,122	4.3%	-0.472	-0.024
Non-ARA potassium sparing diuretics (B)	6,012	3.3%	26,059	3.2%	0.103	0.006
Thiazide diuretics (B)	64,073	34.8%	279,888	33.9%	0.832	0.018
Renin inhibitors (B)	2,231	1.2%	6,402	0.8%	0.434	0.044
Central alpha-2 receptor agonists (B)	7,507	4.1%	36,795	4.5%	-0.388	-0.019
All anti-hypertensive agents (B)	156,052	84.7%	710,324	86.1%	-1.445	-0.041
Lipid lowering agents (B)	133,441	72.4%	601,547	72.9%	-0.526	-0.012
Alpha-glucosidase inhibitors (C)	728	0.4%	3,476	0.4%	-0.026	-0.004

**Table 1a. Baseline Characteristics of New Users of Saxagliptin vs New Users of Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Sitagliptin		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Biguanides (C)	114,784	62.3%	511,801	62.0%	0.231	0.005
Other DPP-4 inhibitors (C)	1,350	0.7%	3,723	0.5%	0.281	0.037
GLP-1 analogues (C)	2,495	1.4%	8,755	1.1%	0.292	0.027
Meglitinides (C)	2,562	1.4%	11,756	1.4%	-0.035	-0.003
Saxagliptin (C)	184,312	100.0%	-	0.0%	100.000	-
Sitagliptin (C)	-	0.0%	824,877	100.0%	-100.000	-
Pioglitazone (C)	18,302	9.9%	75,225	9.1%	0.810	0.028
First-generation sulfonylureas (C)	39	0.0%	156	0.0%	0.002	0.002
Second-generation sulfonylureas (C)	64,805	35.2%	310,138	37.6%	-2.438	-0.051
Long-acting insulins (C)	19,419	10.5%	103,375	12.5%	-1.996	-0.063
Short-acting insulins (C)	5,388	2.9%	36,147	4.4%	-1.459	-0.078
Other thiazolidinediones (C)	1,205	0.7%	4,256	0.5%	0.138	0.018
SGLT-2 inhibitors (C)	1,018	0.6%	4,494	0.5%	0.008	0.001
Amylin analog-types (C)	49	0.0%	171	0.0%	0.006	0.004
All anti-diabetics (C)	184,312	100.0%	824,877	100.0%	0.000	-
Angiotensin-converting enzyme inhibitors (C)	68,027	36.9%	322,194	39.1%	-2.151	-0.044
Alpha blockers (C)	3,952	2.1%	18,959	2.3%	-0.154	-0.010
Angiotensin receptor blockers (C)	44,439	24.1%	189,076	22.9%	1.189	0.028
Beta blockers (C)	60,756	33.0%	296,828	36.0%	-3.021	-0.064
Calcium channel blockers (C)	38,054	20.6%	190,092	23.0%	-2.398	-0.058
Direct vasodilators (C)	2,568	1.4%	15,809	1.9%	-0.523	-0.041
Loop diuretics (C)	22,927	12.4%	122,524	14.9%	-2.414	-0.070
Aldosterone receptor agonists (ARAs) (C)	4,832	2.6%	24,490	3.0%	-0.347	-0.021
Non-ARA potassium sparing diuretics (C)	3,915	2.1%	17,240	2.1%	0.034	0.002
Thiazide diuretics (C)	48,527	26.3%	211,839	25.7%	0.647	0.015
Renin inhibitors (C)	1,325	0.7%	3,780	0.5%	0.261	0.034
Central alpha-2 receptor agonists (C)	4,877	2.6%	24,270	2.9%	-0.296	-0.018
All anti-hypertensive agents (C)	141,732	76.9%	654,629	79.4%	-2.463	-0.060
Lipid lowering agents (C)	111,235	60.4%	509,087	61.7%	-1.365	-0.028
<b>Health Service Utilization Intensity:</b>						
Non-acute institutional stay (IS visit) during prior year	7,601	4.1%	61,909	7.5%	-3.381	-0.145
Any inpatient hospital encounter (IP visit) within prior 30 day	5,687	3.1%	60,628	7.3%	-4.264	-0.193
Any inpatient hospital encounter (IP visit) 31-365 days prior to index date	28,804	15.6%	163,153	19.8%	-4.151	-0.109

**Table 1a. Baseline Characteristics of New Users of Saxagliptin vs New Users of Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Sitagliptin		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Any emergency room encounter (ED visit) within prior 30 days	8,195	4.4%	49,624	6.0%	-1.570	-0.071
Any emergency room encounter (ED visit) 31-365 days prior to index date	44,383	24.1%	225,788	27.4%	-3.292	-0.075
	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters (AV)	18.1	14.8	18.8	15.7	-0.756	-0.049
Mean number of emergency room encounters (ED)	0.5	1.4	0.6	1.6	-0.111	-0.073
Mean number of inpatient hospital encounters (IP)	0.3	0.7	0.4	1.0	-0.145	-0.164
Mean number of non-acute institutional encounters (IS)	0.1	0.4	0.1	0.6	-0.060	-0.111
Mean number of other ambulatory encounters (OA)	4.8	8.4	6.8	13.0	-2.001	-0.183
Mean number of unique drug classes	10.0	5.4	10.5	5.6	-0.488	-0.089
Mean number of generics	11.5	6.4	12.0	6.6	-0.527	-0.081
Mean number of filled prescriptions	50.0	37.5	53.6	40.7	-3.655	-0.093

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

<sup>1</sup>All metrics are based on total number of episodes per group, except for sex, race, and hispanic origin which are based on total number of unique patients

**Table 1b. Baseline Characteristics of New Users of Saxagliptin vs New Users of Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Sitagliptin		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Patients	182,098	99.5%	182,098	22.4%	-	-
<b>Demographics<sup>1</sup></b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Mean</b>	<b>Standard Deviation</b>		
Mean age (years)	65.5	11.0	65.5	11.3	0.002	0.000
Age (years)						
18-29	885	0.5%	942	0.5%	-0.031	-0.004
30-44	12,665	7.0%	13,292	7.3%	-0.344	-0.013
45-54	27,143	14.9%	27,450	15.1%	-0.169	-0.005
55-64	36,889	20.3%	36,563	20.1%	0.179	0.004
65-74	60,784	33.4%	58,779	32.3%	1.101	0.023
75-84	34,419	18.9%	34,902	19.2%	-0.265	-0.007
85+	9,313	5.1%	10,170	5.6%	-0.471	-0.021
Sex						
Female	93,112	51.1%	93,248	51.2%	-0.075	-0.001
Male	88,986	48.9%	88,850	48.8%	0.075	0.001
Race						
American Indian or Alaska Native	992	0.5%	995	0.5%	-0.002	0.000
Asian	5,364	2.9%	5,291	2.9%	0.040	0.002
Black or African American	16,481	9.1%	16,469	9.0%	0.007	0.000
Native Hawaiian or Other Pacific Islander	189	0.1%	190	0.1%	-0.001	0.000
Unknown	66,273	36.4%	66,364	36.4%	-0.050	-0.001
White	92,799	51.0%	92,789	51.0%	0.005	0.000
Year						
2009	1,187	0.7%	1,153	0.6%	0.019	0.002
2010	11,445	6.3%	11,296	6.2%	0.082	0.003
2011	54,860	30.1%	54,880	30.1%	-0.011	0.000
2012	47,091	25.9%	47,687	26.2%	-0.327	-0.007
2013	31,336	17.2%	31,345	17.2%	-0.005	0.000
2014	23,293	12.8%	23,172	12.7%	0.066	0.002
2015	12,886	7.1%	12,565	6.9%	0.176	0.007
<b>Recorded history of:</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Mean</b>	<b>Standard Deviation</b>		
Prior combined comorbidity raw score	1.4	2.4	1.4	2.4	-0.004	-0.002
	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>		
Acute myocardial infarction prior to 60 days before index date (broad)	2,399	1.3%	2,392	1.3%	0.004	0.000
Acute myocardial infarction prior to 60 days before index date (narrow)	988	0.5%	983	0.5%	0.003	0.000
Acute myocardial infarction (broad)	2,721	1.5%	2,756	1.5%	-0.019	-0.002

**Table 1b. Baseline Characteristics of New Users of Saxagliptin vs New Users of Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Sitagliptin		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Hospitalized heart failure prior to 60 days before index date	1,581	0.9%	1,594	0.9%	-0.007	-0.001
Other ischemic heart disease	48,660	26.7%	48,604	26.7%	0.031	0.001
Congestive heart failure	19,609	10.8%	19,401	10.7%	0.114	0.004
Other heart disease	60,383	33.2%	60,268	33.1%	0.063	0.001
Stroke (broad)	18,182	10.0%	18,061	9.9%	0.066	0.002
Stroke (narrow)	1,098	0.6%	1,098	0.6%	0.000	0.000
Peripheral arterial disease	16,372	9.0%	16,322	9.0%	0.027	0.001
All coronary revascularization procedures	14,810	8.1%	14,864	8.2%	-0.030	-0.001
Coronary artery bypass graft	7,541	4.1%	7,616	4.2%	-0.041	-0.002
Percutaneous coronary intervention	9,718	5.3%	9,524	5.2%	0.107	0.005
All carotid revascularization procedures	407	0.2%	378	0.2%	0.016	0.003
Carotid endarterectomy, etc.	407	0.2%	378	0.2%	0.016	0.003
Carotid bypass	-	0.0%	-	0.0%	0.000	-
All lower extremity revascularization	1,275	0.7%	1,235	0.7%	0.022	0.003
Lower extremity endarterectomy, etc.	816	0.4%	762	0.4%	0.030	0.005
Lower extremity bypass	181	0.1%	177	0.1%	0.002	0.001
Lower extremity amputation	450	0.2%	485	0.3%	-0.019	-0.004
All Prior Cardiovascular Disease Covariates	86,284	47.4%	86,017	47.2%	0.147	0.003
Asthma	15,873	8.7%	15,886	8.7%	-0.007	0.000
Cancer (excluding non-melanoma skin cancer)	16,970	9.3%	17,039	9.4%	-0.038	-0.001
Chronic kidney disease (excluding end stage renal disease)	18,533	10.2%	18,640	10.2%	-0.059	-0.002
Chronic obstructive pulmonary disease	22,810	12.5%	22,785	12.5%	0.014	0.000
Dementia	7,452	4.1%	7,544	4.1%	-0.051	-0.003
Depression	23,489	12.9%	23,620	13.0%	-0.072	-0.002
End stage renal disease (ESRD)	2,150	1.2%	2,157	1.2%	-0.004	0.000
Fracture	7,725	4.2%	7,648	4.2%	0.042	0.002
Human immunodeficiency virus (HIV) / acquired immunodeficiency syndrome	363	0.2%	413	0.2%	-0.027	-0.006
Hyperlipidemia or lipid disorder	144,148	79.2%	144,201	79.2%	-0.029	-0.001
Hypertension	153,391	84.2%	153,354	84.2%	0.020	0.001
Hypoglycemia	10,480	5.8%	10,589	5.8%	-0.060	-0.003
Obesity (or weight gain)	36,413	20.0%	36,391	20.0%	0.012	0.000
Osteoporosis	14,268	7.8%	14,160	7.8%	0.059	0.002

**Table 1b. Baseline Characteristics of New Users of Saxagliptin vs New Users of Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Sitagliptin		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Peripheral neuropathy	38,645	21.2%	38,643	21.2%	0.001	0.000
Tobacco use	18,659	10.2%	18,717	10.3%	-0.032	-0.001
All comorbidity covariates	174,611	95.9%	174,027	95.6%	0.321	0.016
<b>History of use:</b>						
Alpha-glucosidase inhibitors (B)	1,237	0.7%	1,544	0.8%	-0.169	-0.019
Biguanides (B)	125,989	69.2%	126,229	69.3%	-0.132	-0.003
Other dipeptidyl peptidase-4 (DPP-4) inhibitors (B)	3,603	2.0%	2,053	1.1%	0.851	0.069
Glucagon-like peptide-1 (GLP-1) analogues (B)	6,837	3.8%	6,770	3.7%	0.037	0.002
Meglitinides (B)	3,994	2.2%	4,815	2.6%	-0.451	-0.029
Saxagliptin (B)	-	0.0%	-	0.0%	0.000	-
Sitagliptin (B)	-	0.0%	-	0.0%	0.000	-
Pioglitazone (B)	35,740	19.6%	35,501	19.5%	0.131	0.003
First-generation sulfonylureas (B)	69	0.0%	65	0.0%	0.002	0.001
Second-generation sulfonylureas (B)	84,387	46.3%	84,687	46.5%	-0.165	-0.003
Long-acting insulins (B)	28,420	15.6%	28,558	15.7%	-0.076	-0.002
Short-acting insulins (B)	11,598	6.4%	11,694	6.4%	-0.053	-0.002
Other thiazolidinediones (B)	5,028	2.8%	4,807	2.6%	0.121	0.007
Sodium-glucose cotransporter-2 (SGLT-2) inhibitors (B)	1,183	0.6%	1,208	0.7%	-0.014	-0.002
Amylin analog-types (B)	180	0.1%	206	0.1%	-0.014	-0.004
All anti-diabetics (B)	161,617	88.8%	161,874	88.9%	-0.141	-0.004
Angiotensin-converting enzyme inhibitors (B)	86,172	47.3%	86,482	47.5%	-0.170	-0.003
Alpha blockers (B)	5,409	3.0%	5,539	3.0%	-0.071	-0.004
Angiotensin receptor blockers (B)	52,933	29.1%	52,577	28.9%	0.195	0.004
Beta blockers (B)	73,480	40.4%	73,734	40.5%	-0.139	-0.003
Calcium channel blockers (B)	47,550	26.1%	47,538	26.1%	0.007	0.000
Direct vasodilators (B)	3,865	2.1%	3,935	2.2%	-0.038	-0.003
Loop diuretics (B)	34,105	18.7%	34,146	18.8%	-0.023	-0.001
Aldosterone receptor agonists (ARAs) (B)	6,927	3.8%	6,843	3.8%	0.046	0.002
Non-ARA potassium sparing diuretics (B)	5,965	3.3%	5,872	3.2%	0.051	0.003
Thiazide diuretics (B)	63,466	34.9%	63,420	34.8%	0.025	0.001
Renin inhibitors (B)	2,224	1.2%	1,770	1.0%	0.249	0.024
Central alpha-2 receptor agonists (B)	7,473	4.1%	7,283	4.0%	0.104	0.005
All anti-hypertensive agents (B)	154,415	84.8%	154,406	84.8%	0.005	0.000
Lipid lowering agents (B)	131,945	72.5%	132,162	72.6%	-0.119	-0.003
Alpha-glucosidase inhibitors (C)	723	0.4%	940	0.5%	-0.119	-0.018

**Table 1b. Baseline Characteristics of New Users of Saxagliptin vs New Users of Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Sitagliptin		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Biguanides (C)	113,266	62.2%	113,293	62.2%	-0.015	0.000
Other DPP-4 inhibitors (C)	1,320	0.7%	753	0.4%	0.311	0.041
GLP-1 analogues (C)	2,451	1.3%	2,375	1.3%	0.042	0.004
Meglitinides (C)	2,538	1.4%	3,158	1.7%	-0.340	-0.027
Saxagliptin (C)	182,098	100.0%	-	0.0%	100.000	-
Sitagliptin (C)	-	0.0%	182,098	100.0%	-100.000	-
Pioglitazone (C)	18,160	10.0%	18,122	10.0%	0.021	0.001
First-generation sulfonylureas (C)	38	0.0%	30	0.0%	0.004	0.003
Second-generation sulfonylureas (C)	64,161	35.2%	64,258	35.3%	-0.053	-0.001
Long-acting insulins (C)	19,244	10.6%	19,368	10.6%	-0.068	-0.002
Short-acting insulins (C)	5,347	2.9%	5,405	3.0%	-0.032	-0.002
Other thiazolidinediones (C)	1,196	0.7%	1,143	0.6%	0.029	0.004
SGLT-2 inhibitors (C)	950	0.5%	970	0.5%	-0.011	-0.002
Amylin analog-types (C)	49	0.0%	59	0.0%	-0.005	-0.003
All anti-diabetics (C)	182,098	100.0%	182,098	100.0%	0.000	-
Angiotensin-converting enzyme inhibitors (C)	67,238	36.9%	67,545	37.1%	-0.169	-0.003
Alpha blockers (C)	3,927	2.2%	3,977	2.2%	-0.027	-0.002
Angiotensin receptor blockers (C)	44,033	24.2%	43,919	24.1%	0.063	0.001
Beta blockers (C)	60,333	33.1%	60,498	33.2%	-0.091	-0.002
Calcium channel blockers (C)	37,778	20.7%	37,741	20.7%	0.020	0.001
Direct vasodilators (C)	2,560	1.4%	2,649	1.5%	-0.049	-0.004
Loop diuretics (C)	22,816	12.5%	23,226	12.8%	-0.225	-0.007
Aldosterone receptor agonists (ARAs) (C)	4,800	2.6%	4,746	2.6%	0.030	0.002
Non-ARA potassium sparing diuretics (C)	3,886	2.1%	3,775	2.1%	0.061	0.004
Thiazide diuretics (C)	48,060	26.4%	48,292	26.5%	-0.127	-0.003
Renin inhibitors (C)	1,322	0.7%	1,046	0.6%	0.152	0.019
Central alpha-2 receptor agonists (C)	4,857	2.7%	4,795	2.6%	0.034	0.002
All anti-hypertensive agents (C)	140,324	77.1%	140,450	77.1%	-0.069	-0.002
Lipid lowering agents (C)	110,026	60.4%	110,387	60.6%	-0.198	-0.004
<b>Health Service Utilization Intensity:</b>						
Non-acute institutional stay (IS visit) during prior year	7,583	4.2%	7,626	4.2%	-0.024	-0.001
Any inpatient hospital encounter (IP visit) within prior 30 day	5,668	3.1%	5,660	3.1%	0.004	0.000
Any inpatient hospital encounter (IP visit) 31-365 days prior to index date	28,624	15.7%	28,474	15.6%	0.082	0.002

**Table 1b. Baseline Characteristics of New Users of Saxagliptin vs New Users of Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Sitagliptin		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Any emergency room encounter (ED visit) within prior 30 days	8,124	4.5%	8,282	4.5%	-0.087	-0.004
Any emergency room encounter (ED visit) 31-365 days prior to index date	43,933	24.1%	44,037	24.2%	-0.057	-0.001
	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters (AV)	18.1	14.9	18.2	15.3	-0.024	-0.002
Mean number of emergency room encounters (ED)	0.5	1.4	0.5	1.4	-0.004	-0.003
Mean number of inpatient hospital encounters (IP)	0.3	0.7	0.3	0.8	-0.004	-0.006
Mean number of non-acute institutional encounters (IS)	0.1	0.4	0.1	0.5	-0.005	-0.010
Mean number of other ambulatory encounters (OA)	4.8	8.5	5.2	9.7	-0.329	-0.036
Mean number of unique drug classes	10.1	5.4	10.1	5.4	-0.011	-0.002
Mean number of generics	11.5	6.4	11.5	6.4	-0.003	0.000
Mean number of filled prescriptions	50.1	37.7	51.0	38.6	-0.866	-0.023

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

<sup>1</sup>All metrics are based on total number of episodes per group, except for sex, race, and hispanic origin which are based on total number of unique patients

**Table 1c. Baseline Characteristics of New Users of Saxagliptin vs New Users of Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Pioglitazone		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Patients	163,182	100.0%	331,580	100.0%	-	-
<b>Demographics<sup>1</sup></b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Mean</b>	<b>Standard Deviation</b>		
Mean age (years)	64.0	10.8	64.0	11.4	-0.003	0.000
Age (years)						
18-29	924	0.6%	2,173	0.7%	-0.089	-0.011
30-44	13,354	8.2%	26,228	7.9%	0.273	0.010
45-54	27,887	17.1%	55,199	16.6%	0.442	0.012
55-64	36,204	22.2%	74,228	22.4%	-0.200	-0.005
65-74	51,204	31.4%	107,904	32.5%	-1.164	-0.025
75-84	26,898	16.5%	53,713	16.2%	0.284	0.008
85+	6,711	4.1%	12,135	3.7%	0.453	0.023
Sex						
Female	84,592	51.8%	157,143	47.4%	4.447	0.089
Male	78,590	48.2%	174,437	52.6%	-4.447	-0.089
Race						
American Indian or Alaska Native	1,054	0.6%	2,528	0.8%	-0.117	-0.014
Asian	4,622	2.8%	13,132	4.0%	-1.128	-0.062
Black or African American	13,139	8.1%	29,735	9.0%	-0.916	-0.033
Native Hawaiian or Other Pacific Islander	143	0.1%	985	0.3%	-0.209	-0.048
Unknown	69,390	42.5%	126,904	38.3%	4.251	0.087
White	74,834	45.9%	158,296	47.7%	-1.881	-0.038
Year						
2009	1,010	0.6%	20,841	6.3%	-5.666	-0.314
2010	9,583	5.9%	55,643	16.8%	-10.909	-0.349
2011	39,063	23.9%	86,917	26.2%	-2.275	-0.052
2012	39,326	24.1%	36,473	11.0%	13.100	0.350
2013	32,693	20.0%	40,480	12.2%	7.826	0.214
2014	24,780	15.2%	48,859	14.7%	0.450	0.013
2015	16,727	10.3%	42,367	12.8%	-2.527	-0.079
<b>Recorded history of:</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Mean</b>	<b>Standard Deviation</b>		
Prior combined comorbidity raw score	0.9	1.9	0.9	1.9	0.002	0.001
	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>		
Acute myocardial infarction prior to 60 days before index date (broad)	1,222	0.7%	2,024	0.6%	0.138	0.017
Acute myocardial infarction prior to 60 days before index date (narrow)	435	0.3%	722	0.2%	0.049	0.010

**Table 1c. Baseline Characteristics of New Users of Saxagliptin vs New Users of Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Pioglitazone		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Acute myocardial infarction (broad)	1,427	0.9%	2,405	0.7%	0.149	0.017
Hospitalized heart failure prior to 60 days before index date	-	0.0%	-	0.0%	0.000	-
Other ischemic heart disease	34,810	21.3%	60,921	18.4%	2.959	0.074
Congestive heart failure	-	0.0%	-	0.0%	0.000	-
Other heart disease	43,775	26.8%	76,654	23.1%	3.708	0.086
Stroke (broad)	13,731	8.4%	24,153	7.3%	1.130	0.042
Stroke (narrow)	784	0.5%	1,760	0.5%	-0.050	-0.007
Peripheral arterial disease	11,740	7.2%	21,082	6.4%	0.836	0.033
All coronary revascularization procedures	9,261	5.7%	15,866	4.8%	0.890	0.040
Coronary artery bypass graft	4,386	2.7%	7,579	2.3%	0.402	0.026
Percutaneous coronary intervention	6,062	3.7%	10,129	3.1%	0.660	0.037
All carotid revascularization procedures	289	0.2%	506	0.2%	0.025	0.006
Carotid endarterectomy, etc.	*****	*****	*****	*****	0.024	0.006
Carotid bypass	*****	*****	*****	*****	0.000	0.001
All lower extremity revascularization	856	0.5%	1,918	0.6%	-0.054	-0.007
Lower extremity endarterectomy, etc.	531	0.3%	1,062	0.3%	0.005	0.001
Lower extremity bypass	112	0.1%	249	0.1%	-0.006	-0.002
Lower extremity amputation	310	0.2%	830	0.3%	-0.060	-0.013
All Prior Cardiovascular Disease Covariates	65,419	40.1%	118,890	35.9%	4.234	0.087
Asthma	13,010	8.0%	24,030	7.2%	0.726	0.027
Cancer (excluding non-melanoma skin cancer)	14,217	8.7%	25,326	7.6%	1.074	0.039
Chronic kidney disease (excluding end stage renal disease)	12,932	7.9%	30,866	9.3%	-1.384	-0.049
Chronic obstructive pulmonary disease	15,351	9.4%	28,032	8.5%	0.953	0.033
Dementia	5,403	3.3%	11,295	3.4%	-0.095	-0.005
Depression	19,994	12.3%	40,135	12.1%	0.148	0.005
End stage renal disease (ESRD)	1,232	0.8%	3,338	1.0%	-0.252	-0.027
Fracture	5,775	3.5%	12,522	3.8%	-0.237	-0.013
Human immunodeficiency virus (HIV) / acquired immunodeficiency syndrome	332	0.2%	1,193	0.4%	-0.156	-0.030
Hyperlipidemia or lipid disorder	127,459	78.1%	250,257	75.5%	2.634	0.062
Hypertension	134,152	82.2%	264,403	79.7%	2.470	0.063
Hypoglycemia	7,902	4.8%	18,895	5.7%	-0.856	-0.038
Obesity (or weight gain)	31,235	19.1%	59,314	17.9%	1.253	0.032
Osteoporosis	11,736	7.2%	20,717	6.2%	0.944	0.038

**Table 1c. Baseline Characteristics of New Users of Saxagliptin vs New Users of Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Pioglitazone		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Peripheral neuropathy	31,963	19.6%	64,981	19.6%	-0.010	0.000
Tobacco use	14,914	9.1%	29,704	9.0%	0.181	0.006
All comorbidity covariates	155,476	95.3%	310,286	93.6%	1.700	0.074
<b>History of use:</b>						
Alpha-glucosidase inhibitors (B)	1,092	0.7%	2,706	0.8%	-0.147	-0.017
Biguanides (B)	117,650	72.1%	231,364	69.8%	2.321	0.051
Other dipeptidyl peptidase-4 (DPP-4) inhibitors (B)	3,600	2.2%	5,385	1.6%	0.582	0.042
Glucagon-like peptide-1 (GLP-1) analogues (B)	6,257	3.8%	16,358	4.9%	-1.099	-0.054
Meglitinides (B)	3,352	2.1%	6,284	1.9%	0.159	0.011
Saxagliptin (B)	-	0.0%	-	0.0%	0.000	-
Sitagliptin (B)	32,775	20.1%	60,094	18.1%	1.961	0.050
Pioglitazone (B)	-	0.0%	-	0.0%	0.000	-
First-generation sulfonylureas (B)	55	0.0%	567	0.2%	-0.137	-0.043
Second-generation sulfonylureas (B)	73,941	45.3%	170,652	51.5%	-6.154	-0.123
Long-acting insulins (B)	24,475	15.0%	54,365	16.4%	-1.397	-0.038
Short-acting insulins (B)	9,184	5.6%	22,885	6.9%	-1.274	-0.053
Other thiazolidinediones (B)	3,948	2.4%	35,306	10.6%	-8.228	-0.338
Sodium-glucose cotransporter-2 (SGLT-2) inhibitors (B)	1,790	1.1%	3,994	1.2%	-0.108	-0.010
Amylin analog-types (B)	145	0.1%	431	0.1%	-0.041	-0.012
All anti-diabetics (B)	144,829	88.8%	295,167	89.0%	-0.265	-0.008
Angiotensin-converting enzyme inhibitors (B)	74,737	45.8%	162,609	49.0%	-3.241	-0.065
Alpha blockers (B)	4,252	2.6%	10,118	3.1%	-0.446	-0.027
Angiotensin receptor blockers (B)	46,855	28.7%	80,390	24.2%	4.469	0.101
Beta blockers (B)	58,575	35.9%	110,780	33.4%	2.486	0.052
Calcium channel blockers (B)	39,988	24.5%	77,978	23.5%	0.988	0.023
Direct vasodilators (B)	2,486	1.5%	4,518	1.4%	0.161	0.013
Loop diuretics (B)	19,447	11.9%	35,340	10.7%	1.259	0.040
Aldosterone receptor agonists (ARAs) (B)	3,829	2.3%	6,585	2.0%	0.361	0.025
Non-ARA potassium sparing diuretics (B)	5,182	3.2%	10,219	3.1%	0.094	0.005
Thiazide diuretics (B)	56,262	34.5%	109,595	33.1%	1.426	0.030
Renin inhibitors (B)	1,639	1.0%	2,161	0.7%	0.353	0.039
Central alpha-2 receptor agonists (B)	5,754	3.5%	10,802	3.3%	0.268	0.015
All anti-hypertensive agents (B)	134,849	82.6%	269,546	81.3%	1.346	0.035
Lipid lowering agents (B)	115,465	70.8%	234,028	70.6%	0.179	0.004
Alpha-glucosidase inhibitors (C)	642	0.4%	1,763	0.5%	-0.138	-0.020

**Table 1c. Baseline Characteristics of New Users of Saxagliptin vs New Users of Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Pioglitazone		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Biguanides (C)	106,699	65.4%	196,923	59.4%	5.997	0.124
Other DPP-4 inhibitors (C)	1,318	0.8%	6,640	2.0%	-1.195	-0.102
GLP-1 analogues (C)	2,262	1.4%	10,115	3.1%	-1.664	-0.113
Meglitinides (C)	2,040	1.3%	4,170	1.3%	-0.007	-0.001
Saxagliptin (C)	163,182	100.0%	-	0.0%	100.000	-
Sitagliptin (C)	10,758	6.6%	44,192	13.3%	-6.735	-0.226
Pioglitazone (C)	-	0.0%	331,580	100.0%	-100.000	-
First-generation sulfonylureas (C)	29	0.0%	357	0.1%	-0.090	-0.036
Second-generation sulfonylureas (C)	56,116	34.4%	141,400	42.6%	-8.256	-0.170
Long-acting insulins (C)	16,673	10.2%	37,910	11.4%	-1.216	-0.039
Short-acting insulins (C)	4,275	2.6%	12,379	3.7%	-1.114	-0.064
Other thiazolidinediones (C)	1,153	0.7%	13,641	4.1%	-3.407	-0.224
SGLT-2 inhibitors (C)	1,386	0.8%	2,812	0.8%	0.001	0.000
Amylin analog-types (C)	36	0.0%	165	0.0%	-0.028	-0.015
All anti-diabetics (C)	163,182	100.0%	331,580	100.0%	0.000	-
Angiotensin-converting enzyme inhibitors (C)	58,810	36.0%	134,208	40.5%	-4.436	-0.091
Alpha blockers (C)	3,175	1.9%	7,660	2.3%	-0.364	-0.025
Angiotensin receptor blockers (C)	39,504	24.2%	68,570	20.7%	3.529	0.085
Beta blockers (C)	48,042	29.4%	92,200	27.8%	1.634	0.036
Calcium channel blockers (C)	32,410	19.9%	65,213	19.7%	0.194	0.005
Direct vasodilators (C)	1,692	1.0%	3,131	0.9%	0.093	0.009
Loop diuretics (C)	12,261	7.5%	22,973	6.9%	0.585	0.023
Aldosterone receptor agonists (ARAs) (C)	2,694	1.7%	4,743	1.4%	0.220	0.018
Non-ARA potassium sparing diuretics (C)	3,418	2.1%	7,262	2.2%	-0.096	-0.007
Thiazide diuretics (C)	43,665	26.8%	87,549	26.4%	0.355	0.008
Renin inhibitors (C)	949	0.6%	1,443	0.4%	0.146	0.021
Central alpha-2 receptor agonists (C)	3,821	2.3%	7,526	2.3%	0.072	0.005
All anti-hypertensive agents (C)	121,444	74.4%	247,306	74.6%	-0.162	-0.004
Lipid lowering agents (C)	95,929	58.8%	201,820	60.9%	-2.080	-0.042
<b>Health Service Utilization Intensity:</b>						
Non-acute institutional stay (IS visit) during prior year	4,377	2.7%	11,084	3.3%	-0.661	-0.039
Any inpatient hospital encounter (IP visit) within prior 30 day	3,525	2.2%	10,934	3.3%	-1.137	-0.070
Any inpatient hospital encounter (IP visit) 31-365 days prior to index date	18,789	11.5%	37,241	11.2%	0.283	0.009

**Table 1c. Baseline Characteristics of New Users of Saxagliptin vs New Users of Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Pioglitazone		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Any emergency room encounter (ED visit) within prior 30 days	6,499	4.0%	15,300	4.6%	-0.632	-0.031
Any emergency room encounter (ED visit) 31-365 days prior to index date	35,856	22.0%	71,706	21.6%	0.347	0.008
	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters (AV)	16.7	14.0	15.3	13.6	1.394	0.101
Mean number of emergency room encounters (ED)	0.4	1.3	0.4	1.3	-0.012	-0.010
Mean number of inpatient hospital encounters (IP)	0.2	0.6	0.2	0.6	-0.015	-0.025
Mean number of non-acute institutional encounters (IS)	0.0	0.3	0.1	0.4	-0.012	-0.031
Mean number of other ambulatory encounters (OA)	3.9	6.5	4.1	7.4	-0.195	-0.028
Mean number of unique drug classes	9.4	5.1	8.9	5.0	0.546	0.108
Mean number of generics	10.8	6.1	10.3	5.9	0.521	0.087
Mean number of filled prescriptions	46.4	35.2	44.3	34.8	2.127	0.061

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

<sup>1</sup>All metrics are based on total number of episodes per group, except for sex, race, and hispanic origin which are based on total number of unique patients

**Table 1d. Baseline Characteristics of New Users of Saxagliptin vs New Users of Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Pioglitazone		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Patients	136,510	84.3%	136,510	43.6%	-	-
<b>Demographics<sup>1</sup></b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Mean</b>	<b>Standard Deviation</b>		
Mean age (years)	65.0	11.0	65.0	11.1	-0.018	-0.002
Age (years)						
18-29	714	0.5%	892	0.7%	-0.130	-0.017
30-44	10,096	7.4%	10,021	7.3%	0.055	0.002
45-54	20,851	15.3%	20,655	15.1%	0.144	0.004
55-64	27,650	20.3%	27,512	20.2%	0.101	0.003
65-74	46,601	34.1%	46,604	34.1%	-0.002	0.000
75-84	24,475	17.9%	25,011	18.3%	-0.393	-0.010
85+	6,123	4.5%	5,815	4.3%	0.226	0.011
Sex						
Female	70,285	51.5%	70,431	51.6%	-0.107	-0.002
Male	66,225	48.5%	66,079	48.4%	0.107	0.002
Race						
American Indian or Alaska Native	1,000	0.7%	1,072	0.8%	-0.053	-0.006
Asian	4,258	3.1%	4,244	3.1%	0.010	0.001
Black or African American	12,080	8.8%	12,029	8.8%	0.037	0.001
Native Hawaiian or Other Pacific Islander	141	0.1%	129	0.1%	0.009	0.003
Unknown	50,005	36.6%	50,080	36.7%	-0.055	-0.001
White	69,026	50.6%	68,956	50.5%	0.051	0.001
Year						
2009	1,001	0.7%	1,234	0.9%	-0.171	-0.019
2010	9,432	6.9%	9,337	6.8%	0.070	0.003
2011	37,080	27.2%	36,763	26.9%	0.232	0.005
2012	26,474	19.4%	26,917	19.7%	-0.325	-0.008
2013	26,310	19.3%	26,496	19.4%	-0.136	-0.003
2014	22,937	16.8%	22,634	16.6%	0.222	0.006
2015	13,276	9.7%	13,129	9.6%	0.108	0.004
<b>Recorded history of:</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Mean</b>	<b>Standard Deviation</b>		
Prior combined comorbidity raw score	1.0	1.9	1.0	2.0	-0.008	-0.004
	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>		
Acute myocardial infarction prior to 60 days before index date (broad)	989	0.7%	957	0.7%	0.023	0.003
Acute myocardial infarction prior to 60 days before index date (narrow)	342	0.3%	346	0.3%	-0.003	-0.001
Acute myocardial infarction (broad)	1,179	0.9%	1,103	0.8%	0.056	0.006

**Table 1d. Baseline Characteristics of New Users of Saxagliptin vs New Users of Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Pioglitazone		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Hospitalized heart failure prior to 60 days before index date	-	0.0%	-	0.0%	0.000	-
Other ischemic heart disease	29,679	21.7%	29,915	21.9%	-0.173	-0.004
Congestive heart failure	-	0.0%	-	0.0%	0.000	-
Other heart disease	37,135	27.2%	37,365	27.4%	-0.168	-0.004
Stroke (broad)	11,841	8.7%	12,001	8.8%	-0.117	-0.004
Stroke (narrow)	688	0.5%	677	0.5%	0.008	0.001
Peripheral arterial disease	10,190	7.5%	10,191	7.5%	-0.001	0.000
All coronary revascularization procedures	7,867	5.8%	7,926	5.8%	-0.043	-0.002
Coronary artery bypass graft	3,777	2.8%	3,810	2.8%	-0.024	-0.001
Percutaneous coronary intervention	5,095	3.7%	5,060	3.7%	0.026	0.001
All carotid revascularization procedures	232	0.2%	241	0.2%	-0.007	-0.002
Carotid endarterectomy, etc.	232	0.2%	241	0.2%	-0.007	-0.002
Carotid bypass	-	0.0%	-	0.0%	0.000	-
All lower extremity revascularization	780	0.6%	794	0.6%	-0.010	-0.001
Lower extremity endarterectomy, etc.	479	0.4%	496	0.4%	-0.012	-0.002
Lower extremity bypass	100	0.1%	108	0.1%	-0.006	-0.002
Lower extremity amputation	290	0.2%	283	0.2%	0.005	0.001
All Prior Cardiovascular Disease Covariates	55,994	41.0%	56,054	41.1%	-0.044	-0.001
Asthma	10,826	7.9%	10,936	8.0%	-0.081	-0.003
Cancer (excluding non-melanoma skin cancer)	12,018	8.8%	12,098	8.9%	-0.059	-0.002
Chronic kidney disease (excluding end stage renal disease)	11,786	8.6%	11,813	8.7%	-0.020	-0.001
Chronic obstructive pulmonary disease	13,442	9.8%	13,586	10.0%	-0.105	-0.004
Dementia	4,940	3.6%	4,978	3.6%	-0.028	-0.001
Depression	17,250	12.6%	17,321	12.7%	-0.052	-0.002
End stage renal disease (ESRD)	1,180	0.9%	1,202	0.9%	-0.016	-0.002
Fracture	5,118	3.7%	5,117	3.7%	0.001	0.000
Human immunodeficiency virus (HIV) / acquired immunodeficiency syndrome	308	0.2%	315	0.2%	-0.005	-0.001
Hyperlipidemia or lipid disorder	106,216	77.8%	106,203	77.8%	0.010	0.000
Hypertension	112,809	82.6%	112,918	82.7%	-0.080	-0.002
Hypoglycemia	7,014	5.1%	6,996	5.1%	0.013	0.001
Obesity (or weight gain)	25,397	18.6%	25,473	18.7%	-0.056	-0.001
Osteoporosis	10,053	7.4%	10,036	7.4%	0.012	0.000

**Table 1d. Baseline Characteristics of New Users of Saxagliptin vs New Users of Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Pioglitazone		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Peripheral neuropathy	27,756	20.3%	27,898	20.4%	-0.104	-0.003
Tobacco use	12,842	9.4%	12,820	9.4%	0.016	0.001
All comorbidity covariates	130,119	95.3%	129,625	95.0%	0.362	0.017
<b>History of use:</b>						
Alpha-glucosidase inhibitors (B)	995	0.7%	1,011	0.7%	-0.012	-0.001
Biguanides (B)	96,871	71.0%	96,708	70.8%	0.119	0.003
Other dipeptidyl peptidase-4 (DPP-4) inhibitors (B)	3,278	2.4%	2,539	1.9%	0.541	0.037
Glucagon-like peptide-1 (GLP-1) analogues (B)	5,364	3.9%	5,404	4.0%	-0.029	-0.002
Meglitinides (B)	3,014	2.2%	2,426	1.8%	0.431	0.031
Saxagliptin (B)	-	0.0%	-	0.0%	0.000	-
Sitagliptin (B)	22,124	16.2%	22,724	16.6%	-0.440	-0.012
Pioglitazone (B)	-	0.0%	-	0.0%	0.000	-
First-generation sulfonylureas (B)	51	0.0%	47	0.0%	0.003	0.002
Second-generation sulfonylureas (B)	64,745	47.4%	65,074	47.7%	-0.241	-0.005
Long-acting insulins (B)	21,328	15.6%	21,376	15.7%	-0.035	-0.001
Short-acting insulins (B)	8,402	6.2%	8,403	6.2%	-0.001	0.000
Other thiazolidinediones (B)	3,912	2.9%	4,267	3.1%	-0.260	-0.015
Sodium-glucose cotransporter-2 (SGLT-2) inhibitors (B)	1,404	1.0%	1,342	1.0%	0.045	0.005
Amylin analog-types (B)	133	0.1%	152	0.1%	-0.014	-0.004
All anti-diabetics (B)	121,142	88.7%	118,977	87.2%	1.586	0.049
Angiotensin-converting enzyme inhibitors (B)	64,074	46.9%	64,196	47.0%	-0.089	-0.002
Alpha blockers (B)	3,752	2.7%	4,117	3.0%	-0.267	-0.016
Angiotensin receptor blockers (B)	37,562	27.5%	37,741	27.6%	-0.131	-0.003
Beta blockers (B)	49,804	36.5%	49,997	36.6%	-0.141	-0.003
Calcium channel blockers (B)	34,443	25.2%	34,550	25.3%	-0.078	-0.002
Direct vasodilators (B)	2,161	1.6%	2,047	1.5%	0.084	0.007
Loop diuretics (B)	16,943	12.4%	16,455	12.1%	0.357	0.011
Aldosterone receptor agonists (ARAs) (B)	3,220	2.4%	3,220	2.4%	0.000	0.000
Non-ARA potassium sparing diuretics (B)	4,354	3.2%	4,503	3.3%	-0.109	-0.006
Thiazide diuretics (B)	46,993	34.4%	47,121	34.5%	-0.094	-0.002
Renin inhibitors (B)	1,330	1.0%	1,047	0.8%	0.207	0.022
Central alpha-2 receptor agonists (B)	4,966	3.6%	5,015	3.7%	-0.036	-0.002
All anti-hypertensive agents (B)	113,450	83.1%	113,191	82.9%	0.190	0.005
Lipid lowering agents (B)	96,725	70.9%	97,035	71.1%	-0.227	-0.005
Alpha-glucosidase inhibitors (C)	584	0.4%	636	0.5%	-0.038	-0.006

**Table 1d. Baseline Characteristics of New Users of Saxagliptin vs New Users of Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Pioglitazone		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Biguanides (C)	85,241	62.4%	84,744	62.1%	0.364	0.008
Other DPP-4 inhibitors (C)	1,182	0.9%	3,136	2.3%	-1.431	-0.115
GLP-1 analogues (C)	2,149	1.6%	2,205	1.6%	-0.041	-0.003
Meglitinides (C)	1,845	1.4%	1,585	1.2%	0.190	0.017
Saxagliptin (C)	136,510	100.0%	-	0.0%	100.000	-
Sitagliptin (C)	9,498	7.0%	9,511	7.0%	-0.010	0.000
Pioglitazone (C)	-	0.0%	136,510	100.0%	-100.000	-
First-generation sulfonylureas (C)	28	0.0%	29	0.0%	-0.001	-0.001
Second-generation sulfonylureas (C)	50,481	37.0%	50,555	37.0%	-0.054	-0.001
Long-acting insulins (C)	14,714	10.8%	14,628	10.7%	0.063	0.002
Short-acting insulins (C)	4,021	2.9%	4,031	3.0%	-0.007	0.000
Other thiazolidinediones (C)	1,146	0.8%	1,324	1.0%	-0.130	-0.014
SGLT-2 inhibitors (C)	1,088	0.8%	1,046	0.8%	0.031	0.003
Amylin analog-types (C)	33	0.0%	56	0.0%	-0.017	-0.009
All anti-diabetics (C)	136,510	100.0%	136,510	100.0%	0.000	-
Angiotensin-converting enzyme inhibitors (C)	51,135	37.5%	51,165	37.5%	-0.022	0.000
Alpha blockers (C)	2,827	2.1%	3,039	2.2%	-0.155	-0.011
Angiotensin receptor blockers (C)	31,757	23.3%	31,814	23.3%	-0.042	-0.001
Beta blockers (C)	41,117	30.1%	41,163	30.2%	-0.034	-0.001
Calcium channel blockers (C)	28,170	20.6%	28,162	20.6%	0.006	0.000
Direct vasodilators (C)	1,501	1.1%	1,381	1.0%	0.088	0.009
Loop diuretics (C)	10,772	7.9%	10,435	7.6%	0.247	0.009
Aldosterone receptor agonists (ARAs) (C)	2,265	1.7%	2,294	1.7%	-0.021	-0.002
Non-ARA potassium sparing diuretics (C)	2,923	2.1%	3,124	2.3%	-0.147	-0.010
Thiazide diuretics (C)	36,744	26.9%	36,812	27.0%	-0.050	-0.001
Renin inhibitors (C)	831	0.6%	614	0.4%	0.159	0.022
Central alpha-2 receptor agonists (C)	3,348	2.5%	3,383	2.5%	-0.026	-0.002
All anti-hypertensive agents (C)	102,853	75.3%	102,940	75.4%	-0.064	-0.001
Lipid lowering agents (C)	81,397	59.6%	81,428	59.6%	-0.023	0.000
<b>Health Service Utilization Intensity:</b>						
Non-acute institutional stay (IS visit) during prior year	4,043	3.0%	4,028	3.0%	0.011	0.001
Any inpatient hospital encounter (IP visit) within prior 30 day	3,354	2.5%	3,425	2.5%	-0.052	-0.003
Any inpatient hospital encounter (IP visit) 31-365 days prior to index date	16,325	12.0%	16,510	12.1%	-0.136	-0.004

**Table 1d. Baseline Characteristics of New Users of Saxagliptin vs New Users of Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Pioglitazone		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Any emergency room encounter (ED visit) within prior 30 days	5,775	4.2%	5,791	4.2%	-0.012	-0.001
Any emergency room encounter (ED visit) 31-365 days prior to index date	30,613	22.4%	30,708	22.5%	-0.070	-0.002
	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters (AV)	16.8	13.8	16.9	14.6	-0.061	-0.004
Mean number of emergency room encounters (ED)	0.4	1.3	0.5	1.4	-0.026	-0.019
Mean number of inpatient hospital encounters (IP)	0.2	0.6	0.2	0.6	-0.009	-0.015
Mean number of non-acute institutional encounters (IS)	0.0	0.3	0.0	0.4	-0.002	-0.004
Mean number of other ambulatory encounters (OA)	4.1	6.7	4.1	7.2	-0.039	-0.006
Mean number of unique drug classes	9.5	5.1	9.5	5.3	-0.001	0.000
Mean number of generics	10.9	6.0	10.9	6.3	-0.047	-0.008
Mean number of filled prescriptions	47.0	35.6	46.4	36.2	0.607	0.017

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

<sup>1</sup>All metrics are based on total number of episodes per group, except for sex, race, and hispanic origin which are based on total number of unique patients

**Table 1e. Baseline Characteristics of New Users of Saxagliptin vs New Users of Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Long-Acting Insulins		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Patients	193,799	100.0%	1,122,474	100.0%	-	-
<b>Demographics<sup>1</sup></b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Mean</b>	<b>Standard Deviation</b>		
Mean age (years)	65.3	10.7	65.5	12.8	-0.227	-0.019
Age (years)						
18-29	892	0.5%	11,922	1.1%	-0.602	-0.069
30-44	13,773	7.1%	83,013	7.4%	-0.289	-0.011
45-54	29,893	15.4%	163,115	14.5%	0.893	0.025
55-64	40,629	21.0%	229,906	20.5%	0.482	0.012
65-74	62,344	32.2%	346,523	30.9%	1.298	0.028
75-84	36,341	18.8%	207,877	18.5%	0.232	0.006
85+	9,927	5.1%	80,118	7.1%	-2.015	-0.084
Sex						
Female	97,871	50.5%	565,148	50.3%	0.153	0.003
Male	95,928	49.5%	557,326	49.7%	-0.153	-0.003
Race						
American Indian or Alaska Native	974	0.5%	9,426	0.8%	-0.337	-0.041
Asian	6,482	3.3%	28,999	2.6%	0.761	0.045
Black or African American	15,111	7.8%	150,229	13.4%	-5.586	-0.182
Native Hawaiian or Other Pacific Islander	183	0.1%	3,901	0.3%	-0.253	-0.054
Unknown	78,729	40.6%	284,502	25.3%	15.278	0.329
White	92,320	47.6%	645,417	57.5%	-9.863	-0.198
Year						
2009	1,253	0.6%	28,818	2.6%	-1.921	-0.153
2010	12,047	6.2%	68,090	6.1%	0.150	0.006
2011	54,215	28.0%	217,253	19.4%	8.620	0.204
2012	49,513	25.5%	218,440	19.5%	6.088	0.146
2013	34,994	18.1%	216,550	19.3%	-1.235	-0.032
2014	25,171	13.0%	213,435	19.0%	-6.026	-0.165
2015	16,606	8.6%	159,888	14.2%	-5.676	-0.179
<b>Recorded history of:</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Mean</b>	<b>Standard Deviation</b>		
Prior combined comorbidity raw score	1.2	2.3	3.0	3.3	-1.736	-0.614
	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>		
Acute myocardial infarction prior to 60 days before index date (broad)	2,170	1.1%	26,802	2.4%	-1.268	-0.097
Acute myocardial infarction prior to 60 days before index date (narrow)	853	0.4%	10,282	0.9%	-0.476	-0.058

**Table 1e. Baseline Characteristics of New Users of Saxagliptin vs New Users of Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Long-Acting Insulins		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Acute myocardial infarction (broad)	2,467	1.3%	35,403	3.2%	-1.881	-0.128
Hospitalized heart failure prior to 60 days before index date	1,366	0.7%	23,670	2.1%	-1.404	-0.119
Other ischemic heart disease	48,018	24.8%	357,100	31.8%	-7.036	-0.157
Congestive heart failure	17,984	9.3%	214,217	19.1%	-9.805	-0.284
Other heart disease	60,614	31.3%	449,867	40.1%	-8.801	-0.185
Stroke (broad)	17,943	9.3%	141,559	12.6%	-3.353	-0.108
Stroke (narrow)	980	0.5%	22,472	2.0%	-1.496	-0.135
Peripheral arterial disease	15,480	8.0%	125,258	11.2%	-3.171	-0.108
All coronary revascularization procedures	13,766	7.1%	139,419	12.4%	-5.317	-0.180
Coronary artery bypass graft	6,970	3.6%	73,858	6.6%	-2.983	-0.136
Percutaneous coronary intervention	8,951	4.6%	92,037	8.2%	-3.581	-0.147
All carotid revascularization procedures	382	0.2%	3,253	0.3%	-0.093	-0.019
Carotid endarterectomy, etc.	*****	*****	*****	*****	-0.092	-0.019
Carotid bypass	*****	*****	*****	*****	0.000	-
All lower extremity revascularization	978	0.5%	20,588	1.8%	-1.330	-0.124
Lower extremity endarterectomy, etc.	686	0.4%	8,787	0.8%	-0.429	-0.057
Lower extremity bypass	153	0.1%	3,066	0.3%	-0.194	-0.046
Lower extremity amputation	269	0.1%	12,585	1.1%	-0.982	-0.124
All Prior Cardiovascular Disease Covariates	86,650	44.7%	624,282	55.6%	-10.905	-0.219
Asthma	15,849	8.2%	122,574	10.9%	-2.742	-0.093
Cancer (excluding non-melanoma skin cancer)	17,812	9.2%	127,371	11.3%	-2.156	-0.071
Chronic kidney disease (excluding end stage renal disease)	17,594	9.1%	186,632	16.6%	-7.548	-0.227
Chronic obstructive pulmonary disease	21,604	11.1%	202,702	18.1%	-6.911	-0.197
Dementia	7,047	3.6%	89,027	7.9%	-4.295	-0.185
Depression	22,459	11.6%	211,833	18.9%	-7.283	-0.204
End stage renal disease (ESRD)	1,629	0.8%	55,108	4.9%	-4.069	-0.245
Fracture	7,576	3.9%	71,994	6.4%	-2.505	-0.113
Human immunodeficiency virus (HIV) / acquired immunodeficiency syndrome	350	0.2%	5,542	0.5%	-0.313	-0.054
Hyperlipidemia or lipid disorder	153,111	79.0%	815,672	72.7%	6.338	0.148
Hypertension	161,432	83.3%	935,395	83.3%	-0.035	-0.001
Hypoglycemia	8,651	4.5%	124,906	11.1%	-6.664	-0.250
Obesity (or weight gain)	36,058	18.6%	288,176	25.7%	-7.067	-0.171
Osteoporosis	15,086	7.8%	76,543	6.8%	0.965	0.037

**Table 1e. Baseline Characteristics of New Users of Saxagliptin vs New Users of Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Long-Acting Insulins		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Peripheral neuropathy	36,292	18.7%	299,125	26.6%	-7.922	-0.190
Tobacco use	18,004	9.3%	211,515	18.8%	-9.554	-0.277
All comorbidity covariates	185,245	95.6%	1,063,424	94.7%	0.847	0.039
<b>History of use:</b>						
Alpha-glucosidase inhibitors (B)	1,437	0.7%	10,755	1.0%	-0.217	-0.024
Biguanides (B)	140,297	72.4%	680,851	60.7%	11.737	0.251
Other dipeptidyl peptidase-4 (DPP-4) inhibitors (B)	3,862	2.0%	21,238	1.9%	0.101	0.007
Glucagon-like peptide-1 (GLP-1) analogues (B)	6,366	3.3%	74,953	6.7%	-3.393	-0.156
Meglitinides (B)	4,426	2.3%	29,879	2.7%	-0.378	-0.024
Saxagliptin (B)	-	0.0%	-	0.0%	0.000	-
Sitagliptin (B)	37,681	19.4%	221,422	19.7%	-0.283	-0.007
Pioglitazone (B)	38,111	19.7%	154,329	13.7%	5.916	0.159
First-generation sulfonylureas (B)	73	0.0%	1,854	0.2%	-0.128	-0.040
Second-generation sulfonylureas (B)	93,604	48.3%	634,295	56.5%	-8.209	-0.165
Long-acting insulins (B)	*****	*****	*****	*****	0.000	-
Short-acting insulins (B)	1,985	1.0%	106,218	9.5%	-8.439	-0.386
Other thiazolidinediones (B)	5,207	2.7%	11,475	1.0%	1.665	0.124
Sodium-glucose cotransporter-2 (SGLT-2) inhibitors (B)	1,671	0.9%	11,223	1.0%	-0.138	-0.014
Amylin analog-types (B)	34	0.0%	1,479	0.1%	-0.114	-0.042
All anti-diabetics (B)	173,111	89.3%	900,627	80.2%	9.089	0.255
Angiotensin-converting enzyme inhibitors (B)	89,445	46.2%	545,795	48.6%	-2.471	-0.049
Alpha blockers (B)	5,512	2.8%	41,660	3.7%	-0.867	-0.049
Angiotensin receptor blockers (B)	57,255	29.5%	249,304	22.2%	7.333	0.168
Beta blockers (B)	74,642	38.5%	507,309	45.2%	-6.680	-0.136
Calcium channel blockers (B)	48,594	25.1%	329,118	29.3%	-4.246	-0.096
Direct vasodilators (B)	3,400	1.8%	46,433	4.1%	-2.382	-0.141
Loop diuretics (B)	31,241	16.1%	298,931	26.6%	-10.511	-0.259
Aldosterone receptor agonists (ARAs) (B)	6,508	3.4%	61,458	5.5%	-2.117	-0.103
Non-ARA potassium sparing diuretics (B)	6,307	3.3%	30,410	2.7%	0.545	0.032
Thiazide diuretics (B)	67,194	34.7%	335,805	29.9%	4.755	0.102
Renin inhibitors (B)	2,307	1.2%	6,075	0.5%	0.649	0.070
Central alpha-2 receptor agonists (B)	7,063	3.6%	63,907	5.7%	-2.049	-0.097
All anti-hypertensive agents (B)	162,807	84.0%	943,055	84.0%	-0.008	0.000
Lipid lowering agents (B)	140,570	72.5%	751,770	67.0%	5.560	0.121
Alpha-glucosidase inhibitors (C)	873	0.5%	6,049	0.5%	-0.088	-0.013

**Table 1e. Baseline Characteristics of New Users of Saxagliptin vs New Users of Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Long-Acting Insulins		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Biguanides (C)	124,402	64.2%	488,496	43.5%	20.672	0.424
Other DPP-4 inhibitors (C)	1,398	0.7%	14,786	1.3%	-0.596	-0.059
GLP-1 analogues (C)	2,473	1.3%	37,762	3.4%	-2.088	-0.139
Meglitinides (C)	2,799	1.4%	18,837	1.7%	-0.234	-0.019
Saxagliptin (C)	193,799	100.0%	-	0.0%	100.000	-
Sitagliptin (C)	12,956	6.7%	145,662	13.0%	-6.292	-0.213
Pioglitazone (C)	19,465	10.0%	77,868	6.9%	3.107	0.112
First-generation sulfonylureas (C)	44	0.0%	1,065	0.1%	-0.072	-0.030
Second-generation sulfonylureas (C)	72,369	37.3%	464,559	41.4%	-4.045	-0.083
Long-acting insulins (C)	-	0.0%	1,122,474	100.0%	-100.000	-
Short-acting insulins (C)	793	0.4%	210,255	18.7%	-18.322	-0.655
Other thiazolidinediones (C)	1,223	0.6%	2,643	0.2%	0.396	0.060
SGLT-2 inhibitors (C)	1,291	0.7%	6,754	0.6%	0.064	0.008
Amylin analog-types (C)	*****	*****	*****	*****	-0.047	-0.029
All anti-diabetics (C)	193,799	100.0%	1,122,474	100.0%	0.000	-
Angiotensin-converting enzyme inhibitors (C)	70,198	36.2%	417,158	37.2%	-0.942	-0.020
Alpha blockers (C)	4,035	2.1%	29,166	2.6%	-0.516	-0.034
Angiotensin receptor blockers (C)	47,880	24.7%	191,059	17.0%	7.685	0.190
Beta blockers (C)	61,478	31.7%	420,206	37.4%	-5.713	-0.120
Calcium channel blockers (C)	38,976	20.1%	263,223	23.5%	-3.339	-0.081
Direct vasodilators (C)	2,277	1.2%	34,468	3.1%	-1.896	-0.132
Loop diuretics (C)	20,731	10.7%	213,622	19.0%	-8.334	-0.236
Aldosterone receptor agonists (ARAs) (C)	4,542	2.3%	41,746	3.7%	-1.375	-0.080
Non-ARA potassium sparing diuretics (C)	4,143	2.1%	18,485	1.6%	0.491	0.036
Thiazide diuretics (C)	51,357	26.5%	232,488	20.7%	5.788	0.137
Renin inhibitors (C)	1,345	0.7%	3,011	0.3%	0.426	0.062
Central alpha-2 receptor agonists (C)	4,583	2.4%	43,527	3.9%	-1.513	-0.087
All anti-hypertensive agents (C)	147,645	76.2%	859,475	76.6%	-0.385	-0.009
Lipid lowering agents (C)	117,185	60.5%	607,866	54.2%	6.313	0.128
<b>Health Service Utilization Intensity:</b>						
Non-acute institutional stay (IS visit) during prior year	6,365	3.3%	159,985	14.3%	-10.969	-0.395
Any inpatient hospital encounter (IP visit) within prior 30 day	4,828	2.5%	224,256	20.0%	-17.487	-0.576
Any inpatient hospital encounter (IP visit) 31-365 days prior to index date	26,077	13.5%	323,889	28.9%	-15.399	-0.384

**Table 1e. Baseline Characteristics of New Users of Saxagliptin vs New Users of Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Long-Acting Insulins		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Any emergency room encounter (ED visit) within prior 30 days	7,604	3.9%	132,564	11.8%	-7.886	-0.296
Any emergency room encounter (ED visit) 31-365 days prior to index date	42,437	21.9%	384,254	34.2%	-12.335	-0.277
	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters (AV)	17.3	14.5	19.8	17.4	-2.486	-0.155
Mean number of emergency room encounters (ED)	0.4	1.3	0.9	2.0	-0.454	-0.266
Mean number of inpatient hospital encounters (IP)	0.2	0.6	0.8	1.4	-0.548	-0.515
Mean number of non-acute institutional encounters (IS)	0.0	0.4	0.3	1.1	-0.219	-0.276
Mean number of other ambulatory encounters (OA)	4.3	7.1	10.8	17.7	-6.470	-0.480
Mean number of unique drug classes	9.6	5.2	10.8	5.9	-1.190	-0.214
Mean number of generics	11.1	6.1	12.5	6.9	-1.378	-0.211
Mean number of filled prescriptions	48.3	35.9	53.2	41.6	-4.914	-0.126

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

<sup>1</sup>All metrics are based on total number of episodes per group, except for sex, race, and hispanic origin which are based on total number of unique patients

**Table 1f. Baseline Characteristics of New Users of Saxagliptin vs New Users of Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Long-Acting Insulins		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Patients	171,769	89.2%	171,769	16.7%	-	-
<b>Demographics<sup>1</sup></b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Mean</b>	<b>Standard Deviation</b>		
Mean age (years)	65.8	10.9	65.9	11.1	-0.168	-0.015
Age (years)						
18-29	813	0.5%	1,030	0.6%	-0.126	-0.017
30-44	11,959	7.0%	11,078	6.4%	0.513	0.021
45-54	24,793	14.4%	24,616	14.3%	0.103	0.003
55-64	33,335	19.4%	35,416	20.6%	-1.212	-0.030
65-74	58,114	33.8%	55,858	32.5%	1.313	0.028
75-84	33,550	19.5%	33,217	19.3%	0.194	0.005
85+	9,205	5.4%	10,554	6.1%	-0.785	-0.034
Sex						
Female	87,668	51.0%	88,185	51.3%	-0.301	-0.006
Male	84,101	49.0%	83,584	48.7%	0.301	0.006
Race						
American Indian or Alaska Native	948	0.6%	986	0.6%	-0.022	-0.003
Asian	4,692	2.7%	4,995	2.9%	-0.176	-0.011
Black or African American	14,690	8.6%	14,685	8.5%	0.003	0.000
Native Hawaiian or Other Pacific Islander	179	0.1%	183	0.1%	-0.002	-0.001
Unknown	63,006	36.7%	63,052	36.7%	-0.027	-0.001
White	88,254	51.4%	87,868	51.2%	0.225	0.004
Year						
2009	1,243	0.7%	1,374	0.8%	-0.076	-0.009
2010	11,173	6.5%	11,158	6.5%	0.009	0.000
2011	46,747	27.2%	47,577	27.7%	-0.483	-0.011
2012	42,239	24.6%	42,354	24.7%	-0.067	-0.002
2013	32,176	18.7%	31,659	18.4%	0.301	0.008
2014	24,209	14.1%	23,769	13.8%	0.256	0.007
2015	13,982	8.1%	13,878	8.1%	0.061	0.002
<b>Recorded history of:</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Mean</b>	<b>Standard Deviation</b>		
Prior combined comorbidity raw score	1.4	2.3	1.4	2.3	-0.011	-0.005
	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>		
Acute myocardial infarction prior to 60 days before index date (broad)	2,069	1.2%	2,099	1.2%	-0.017	-0.002
Acute myocardial infarction prior to 60 days before index date (narrow)	808	0.5%	839	0.5%	-0.018	-0.003
Acute myocardial infarction (broad)	2,350	1.4%	2,454	1.4%	-0.061	-0.005

**Table 1f. Baseline Characteristics of New Users of Saxagliptin vs New Users of Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Long-Acting Insulins		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Hospitalized heart failure prior to 60 days before index date	1,356	0.8%	1,406	0.8%	-0.029	-0.003
Other ischemic heart disease	44,665	26.0%	45,023	26.2%	-0.208	-0.005
Congestive heart failure	17,335	10.1%	17,393	10.1%	-0.034	-0.001
Other heart disease	55,449	32.3%	56,053	32.6%	-0.352	-0.008
Stroke (broad)	16,543	9.6%	16,826	9.8%	-0.165	-0.006
Stroke (narrow)	952	0.6%	921	0.5%	0.018	0.002
Peripheral arterial disease	14,372	8.4%	14,480	8.4%	-0.063	-0.002
All coronary revascularization procedures	13,116	7.6%	13,143	7.7%	-0.016	-0.001
Coronary artery bypass graft	6,703	3.9%	6,928	4.0%	-0.131	-0.007
Percutaneous coronary intervention	8,505	5.0%	8,319	4.8%	0.108	0.005
All carotid revascularization procedures	349	0.2%	393	0.2%	-0.026	-0.006
Carotid endarterectomy, etc.	349	0.2%	393	0.2%	-0.026	-0.006
Carotid bypass	-	0.0%	-	0.0%	0.000	-
All lower extremity revascularization	947	0.6%	947	0.6%	0.000	0.000
Lower extremity endarterectomy, etc.	660	0.4%	599	0.3%	0.036	0.006
Lower extremity bypass	149	0.1%	132	0.1%	0.010	0.003
Lower extremity amputation	265	0.2%	365	0.2%	-0.058	-0.014
All Prior Cardiovascular Disease Covariates	79,487	46.3%	80,775	47.0%	-0.750	-0.015
Asthma	14,360	8.4%	14,292	8.3%	0.040	0.001
Cancer (excluding non-melanoma skin cancer)	16,449	9.6%	16,550	9.6%	-0.059	-0.002
Chronic kidney disease (excluding end stage renal disease)	16,914	9.8%	17,101	10.0%	-0.109	-0.004
Chronic obstructive pulmonary disease	20,407	11.9%	20,382	11.9%	0.015	0.000
Dementia	6,767	3.9%	6,939	4.0%	-0.100	-0.005
Depression	21,182	12.3%	21,243	12.4%	-0.036	-0.001
End stage renal disease (ESRD)	1,622	0.9%	1,740	1.0%	-0.069	-0.007
Fracture	7,073	4.1%	7,099	4.1%	-0.015	-0.001
Human immunodeficiency virus (HIV) / acquired immunodeficiency syndrome	343	0.2%	338	0.2%	0.003	0.001
Hyperlipidemia or lipid disorder	134,397	78.2%	134,792	78.5%	-0.230	-0.006
Hypertension	143,469	83.5%	143,891	83.8%	-0.246	-0.007
Hypoglycemia	8,253	4.8%	8,400	4.9%	-0.086	-0.004
Obesity (or weight gain)	32,692	19.0%	32,774	19.1%	-0.048	-0.001
Osteoporosis	12,911	7.5%	13,358	7.8%	-0.260	-0.010

**Table 1f. Baseline Characteristics of New Users of Saxagliptin vs New Users of Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Long-Acting Insulins		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Peripheral neuropathy	34,139	19.9%	34,382	20.0%	-0.141	-0.004
Tobacco use	17,031	9.9%	16,840	9.8%	0.111	0.004
All comorbidity covariates	164,115	95.5%	162,817	94.8%	0.756	0.035
<b>History of use:</b>						
Alpha-glucosidase inhibitors (B)	1,367	0.8%	1,537	0.9%	-0.099	-0.011
Biguanides (B)	122,648	71.4%	124,001	72.2%	-0.788	-0.018
Other dipeptidyl peptidase-4 (DPP-4) inhibitors (B)	3,694	2.2%	3,136	1.8%	0.325	0.023
Glucagon-like peptide-1 (GLP-1) analogues (B)	6,273	3.7%	6,289	3.7%	-0.009	0.000
Meglitinides (B)	4,130	2.4%	4,795	2.8%	-0.387	-0.024
Saxagliptin (B)	-	0.0%	-	0.0%	0.000	-
Sitagliptin (B)	30,794	17.9%	31,488	18.3%	-0.404	-0.010
Pioglitazone (B)	33,033	19.2%	33,612	19.6%	-0.337	-0.009
First-generation sulfonylureas (B)	68	0.0%	64	0.0%	0.002	0.001
Second-generation sulfonylureas (B)	89,022	51.8%	89,831	52.3%	-0.471	-0.009
Long-acting insulins (B)	*****	*****	*****	*****	-0.001	-
Short-acting insulins (B)	1,978	1.2%	2,345	1.4%	-0.214	-0.019
Other thiazolidinediones (B)	3,818	2.2%	3,974	2.3%	-0.091	-0.006
Sodium-glucose cotransporter-2 (SGLT-2) inhibitors (B)	1,388	0.8%	1,348	0.8%	0.023	0.003
Amylin analog-types (B)	28	0.0%	120	0.1%	-0.054	-0.026
All anti-diabetics (B)	153,670	89.5%	144,745	84.3%	5.196	0.154
Angiotensin-converting enzyme inhibitors (B)	81,242	47.3%	81,017	47.2%	0.131	0.003
Alpha blockers (B)	5,180	3.0%	5,174	3.0%	0.003	0.000
Angiotensin receptor blockers (B)	48,113	28.0%	49,124	28.6%	-0.589	-0.013
Beta blockers (B)	68,426	39.8%	68,532	39.9%	-0.062	-0.001
Calcium channel blockers (B)	44,452	25.9%	44,856	26.1%	-0.235	-0.005
Direct vasodilators (B)	3,296	1.9%	3,656	2.1%	-0.210	-0.015
Loop diuretics (B)	29,840	17.4%	31,995	18.6%	-1.255	-0.033
Aldosterone receptor agonists (ARAs) (B)	6,179	3.6%	6,228	3.6%	-0.029	-0.002
Non-ARA potassium sparing diuretics (B)	5,791	3.4%	4,651	2.7%	0.664	0.039
Thiazide diuretics (B)	58,888	34.3%	59,484	34.6%	-0.347	-0.007
Renin inhibitors (B)	1,979	1.2%	1,190	0.7%	0.459	0.048
Central alpha-2 receptor agonists (B)	6,637	3.9%	6,565	3.8%	0.042	0.002
All anti-hypertensive agents (B)	144,849	84.3%	144,324	84.0%	0.306	0.008
Lipid lowering agents (B)	123,373	71.8%	124,258	72.3%	-0.515	-0.011
Alpha-glucosidase inhibitors (C)	824	0.5%	881	0.5%	-0.033	-0.005

**Table 1f. Baseline Characteristics of New Users of Saxagliptin vs New Users of Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Long-Acting Insulins		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Biguanides (C)	104,492	60.8%	105,582	61.5%	-0.635	-0.013
Other DPP-4 inhibitors (C)	1,327	0.8%	2,377	1.4%	-0.611	-0.059
GLP-1 analogues (C)	2,444	1.4%	2,522	1.5%	-0.045	-0.004
Meglitinides (C)	2,606	1.5%	3,115	1.8%	-0.296	-0.023
Saxagliptin (C)	171,769	100.0%	-	0.0%	100.000	-
Sitagliptin (C)	12,506	7.3%	12,331	7.2%	0.102	0.004
Pioglitazone (C)	16,917	9.8%	17,303	10.1%	-0.225	-0.008
First-generation sulfonylureas (C)	39	0.0%	30	0.0%	0.005	0.004
Second-generation sulfonylureas (C)	68,807	40.1%	69,410	40.4%	-0.351	-0.007
Long-acting insulins (C)	-	0.0%	171,769	100.0%	-100.000	-
Short-acting insulins (C)	787	0.5%	1,413	0.8%	-0.364	-0.046
Other thiazolidinediones (C)	849	0.5%	895	0.5%	-0.027	-0.004
SGLT-2 inhibitors (C)	1,056	0.6%	1,014	0.6%	0.024	0.003
Amylin analog-types (C)	*****	*****	*****	*****	-0.024	-0.020
All anti-diabetics (C)	171,769	100.0%	171,769	100.0%	0.000	-
Angiotensin-converting enzyme inhibitors (C)	63,921	37.2%	63,632	37.0%	0.168	0.003
Alpha blockers (C)	3,793	2.2%	3,772	2.2%	0.012	0.001
Angiotensin receptor blockers (C)	39,758	23.1%	40,797	23.8%	-0.605	-0.014
Beta blockers (C)	56,369	32.8%	56,565	32.9%	-0.114	-0.002
Calcium channel blockers (C)	35,670	20.8%	36,218	21.1%	-0.319	-0.008
Direct vasodilators (C)	2,210	1.3%	2,559	1.5%	-0.203	-0.017
Loop diuretics (C)	19,903	11.6%	22,167	12.9%	-1.318	-0.040
Aldosterone receptor agonists (ARAs) (C)	4,306	2.5%	4,312	2.5%	-0.003	0.000
Non-ARA potassium sparing diuretics (C)	3,800	2.2%	3,099	1.8%	0.408	0.029
Thiazide diuretics (C)	44,664	26.0%	45,250	26.3%	-0.341	-0.008
Renin inhibitors (C)	1,161	0.7%	633	0.4%	0.307	0.043
Central alpha-2 receptor agonists (C)	4,321	2.5%	4,495	2.6%	-0.101	-0.006
All anti-hypertensive agents (C)	131,456	76.5%	131,481	76.5%	-0.015	0.000
Lipid lowering agents (C)	102,392	59.6%	103,136	60.0%	-0.433	-0.009
<b>Health Service Utilization Intensity:</b>						
Non-acute institutional stay (IS visit) during prior year	6,333	3.7%	6,500	3.8%	-0.097	-0.005
Any inpatient hospital encounter (IP visit) within prior 30 day	4,813	2.8%	5,281	3.1%	-0.272	-0.016
Any inpatient hospital encounter (IP visit) 31-365 days prior to index date	24,978	14.5%	25,057	14.6%	-0.046	-0.001

**Table 1f. Baseline Characteristics of New Users of Saxagliptin vs New Users of Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Long-Acting Insulins		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Any emergency room encounter (ED visit) within prior 30 days	7,496	4.4%	7,679	4.5%	-0.107	-0.005
Any emergency room encounter (ED visit) 31-365 days prior to index date	39,992	23.3%	39,696	23.1%	0.172	0.004
	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters (AV)	17.7	14.5	17.8	15.3	-0.142	-0.010
Mean number of emergency room encounters (ED)	0.5	1.3	0.5	1.3	-0.014	-0.010
Mean number of inpatient hospital encounters (IP)	0.2	0.7	0.3	0.7	-0.011	-0.016
Mean number of non-acute institutional encounters (IS)	0.1	0.4	0.1	0.4	-0.005	-0.012
Mean number of other ambulatory encounters (OA)	4.5	7.5	4.9	9.1	-0.404	-0.049
Mean number of unique drug classes	9.7	5.2	9.7	5.3	-0.015	-0.003
Mean number of generics	11.2	6.2	11.3	6.3	-0.104	-0.017
Mean number of filled prescriptions	49.0	36.4	49.2	37.9	-0.236	-0.006

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

<sup>1</sup>All metrics are based on total number of episodes per group, except for sex, race, and hispanic origin which are based on total number of unique patients

**Table 1g. Baseline Characteristics of New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Second-Generation Sulfonylurea		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Patients	119,240	100.0%	1,369,494	100.0%	-	-
<b>Demographics<sup>1</sup></b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Mean</b>	<b>Standard Deviation</b>		
Mean age (years)	63.9	11.1	65.5	12.0	-1.649	-0.143
Age (years)						
18-29	705	0.6%	8,479	0.6%	-0.028	-0.004
30-44	10,156	8.5%	99,761	7.3%	1.233	0.046
45-54	20,760	17.4%	203,808	14.9%	2.528	0.069
55-64	27,035	22.7%	277,781	20.3%	2.389	0.058
65-74	35,559	29.8%	440,716	32.2%	-2.360	-0.051
75-84	19,551	16.4%	253,404	18.5%	-2.107	-0.056
85+	5,474	4.6%	85,545	6.2%	-1.656	-0.073
Sex						
Female	61,647	51.7%	686,933	50.2%	1.540	0.031
Male	57,593	48.3%	682,561	49.8%	-1.540	-0.031
Race						
American Indian or Alaska Native	809	0.7%	8,845	0.6%	0.033	0.004
Asian	3,537	3.0%	46,308	3.4%	-0.415	-0.024
Black or African American	9,592	8.0%	154,826	11.3%	-3.261	-0.110
Native Hawaiian or Other Pacific Islander	79	0.1%	5,644	0.4%	-0.346	-0.071
Unknown	51,450	43.1%	402,808	29.4%	13.735	0.289
White	53,773	45.1%	751,063	54.8%	-9.746	-0.196
Year						
2009	731	0.6%	43,193	3.2%	-2.541	-0.188
2010	6,918	5.8%	104,723	7.6%	-1.845	-0.074
2011	31,528	26.4%	275,483	20.1%	6.325	0.150
2012	30,674	25.7%	259,461	18.9%	6.779	0.163
2013	21,614	18.1%	242,745	17.7%	0.401	0.010
2014	16,408	13.8%	250,394	18.3%	-4.523	-0.124
2015	11,367	9.5%	193,495	14.1%	-4.596	-0.143
<b>Recorded history of:</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Mean</b>	<b>Standard Deviation</b>		
Prior combined comorbidity raw score	1.3	2.4	1.8	2.7	-0.447	-0.175
	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>		
Acute myocardial infarction prior to 60 days before index date (broad)	1,419	1.2%	21,080	1.5%	-0.349	-0.030
Acute myocardial infarction prior to 60 days before index date (narrow)	574	0.5%	8,145	0.6%	-0.113	-0.015

**Table 1g. Baseline Characteristics of New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Second-Generation Sulfonylurea		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Acute myocardial infarction (broad)	1,601	1.3%	25,967	1.9%	-0.553	-0.044
Hospitalized heart failure prior to 60 days before index date	900	0.8%	15,659	1.1%	-0.389	-0.040
Other ischemic heart disease	29,387	24.6%	351,320	25.7%	-1.008	-0.023
Congestive heart failure	11,810	9.9%	170,229	12.4%	-2.526	-0.080
Other heart disease	37,576	31.5%	442,967	32.3%	-0.832	-0.018
Stroke (broad)	11,078	9.3%	131,732	9.6%	-0.329	-0.011
Stroke (narrow)	659	0.6%	14,571	1.1%	-0.511	-0.057
Peripheral arterial disease	9,832	8.2%	111,858	8.2%	0.078	0.003
All coronary revascularization procedures	8,637	7.2%	119,648	8.7%	-1.493	-0.055
Coronary artery bypass graft	4,322	3.6%	61,262	4.5%	-0.849	-0.043
Percutaneous coronary intervention	5,702	4.8%	78,451	5.7%	-0.947	-0.042
All carotid revascularization procedures	231	0.2%	3,070	0.2%	-0.030	-0.007
Carotid endarterectomy, etc.	*****	*****	*****	*****	-0.031	-0.007
Carotid bypass	*****	*****	*****	*****	0.000	0.002
All lower extremity revascularization	739	0.6%	12,100	0.9%	-0.264	-0.031
Lower extremity endarterectomy, etc.	445	0.4%	6,174	0.5%	-0.078	-0.012
Lower extremity bypass	104	0.1%	2,032	0.1%	-0.061	-0.018
Lower extremity amputation	281	0.2%	5,875	0.4%	-0.193	-0.034
All Prior Cardiovascular Disease Covariates	53,308	44.7%	632,144	46.2%	-1.452	-0.029
Asthma	11,016	9.2%	128,939	9.4%	-0.177	-0.006
Cancer (excluding non-melanoma skin cancer)	10,499	8.8%	132,527	9.7%	-0.872	-0.030
Chronic kidney disease (excluding end stage renal disease)	10,274	8.6%	154,664	11.3%	-2.677	-0.090
Chronic obstructive pulmonary disease	14,582	12.2%	193,098	14.1%	-1.871	-0.055
Dementia	4,728	4.0%	72,998	5.3%	-1.365	-0.065
Depression	16,011	13.4%	206,745	15.1%	-1.669	-0.048
End stage renal disease (ESRD)	1,432	1.2%	26,821	2.0%	-0.758	-0.061
Fracture	4,860	4.1%	64,365	4.7%	-0.624	-0.030
Human immunodeficiency virus (HIV) / acquired immunodeficiency syndrome	294	0.2%	4,937	0.4%	-0.114	-0.021
Hyperlipidemia or lipid disorder	92,716	77.8%	981,157	71.6%	6.112	0.141
Hypertension	97,376	81.7%	1,096,344	80.1%	1.609	0.041
Hypoglycemia	5,609	4.7%	86,029	6.3%	-1.578	-0.069
Obesity (or weight gain)	24,425	20.5%	295,372	21.6%	-1.084	-0.027
Osteoporosis	9,656	8.1%	89,958	6.6%	1.529	0.059

**Table 1g. Baseline Characteristics of New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Second-Generation Sulfonylurea		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Peripheral neuropathy	23,048	19.3%	263,762	19.3%	0.069	0.002
Tobacco use	12,130	10.2%	190,936	13.9%	-3.769	-0.116
All comorbidity covariates	113,469	95.2%	1,276,350	93.2%	1.962	0.084
<b>History of use:</b>						
Alpha-glucosidase inhibitors (B)	572	0.5%	4,590	0.3%	0.145	0.023
Biguanides (B)	79,262	66.5%	858,460	62.7%	3.788	0.079
Other dipeptidyl peptidase-4 (DPP-4) inhibitors (B)	2,556	2.1%	14,525	1.1%	1.083	0.086
Glucagon-like peptide-1 (GLP-1) analogues (B)	4,494	3.8%	37,137	2.7%	1.057	0.060
Meglitinides (B)	3,241	2.7%	20,763	1.5%	1.202	0.084
Saxagliptin (B)	-	0.0%	-	0.0%	0.000	-
Sitagliptin (B)	21,852	18.3%	162,967	11.9%	6.426	0.180
Pioglitazone (B)	20,513	17.2%	123,892	9.0%	8.157	0.243
First-generation sulfonylureas (B)	46	0.0%	5,970	0.4%	-0.397	-0.082
Second-generation sulfonylureas (B)	*****	*****	*****	*****	0.000	-
Long-acting insulins (B)	21,027	17.6%	192,898	14.1%	3.549	0.097
Short-acting insulins (B)	9,591	8.0%	89,218	6.5%	1.529	0.059
Other thiazolidinediones (B)	2,718	2.3%	12,894	0.9%	1.338	0.106
Sodium-glucose cotransporter-2 (SGLT-2) inhibitors (B)	1,120	0.9%	6,955	0.5%	0.431	0.051
Amylin analog-types (B)	166	0.1%	576	0.0%	0.097	0.032
All anti-diabetics (B)	99,099	83.1%	1,034,253	75.5%	7.588	0.188
Angiotensin-converting enzyme inhibitors (B)	50,482	42.3%	620,776	45.3%	-2.992	-0.060
Alpha blockers (B)	2,910	2.4%	44,357	3.2%	-0.798	-0.048
Angiotensin receptor blockers (B)	35,717	30.0%	298,104	21.8%	8.186	0.188
Beta blockers (B)	44,706	37.5%	536,660	39.2%	-1.694	-0.035
Calcium channel blockers (B)	28,113	23.6%	351,226	25.6%	-2.070	-0.048
Direct vasodilators (B)	2,198	1.8%	34,493	2.5%	-0.675	-0.046
Loop diuretics (B)	19,907	16.7%	257,549	18.8%	-2.111	-0.055
Aldosterone receptor agonists (ARAs) (B)	4,406	3.7%	53,675	3.9%	-0.224	-0.012
Non-ARA potassium sparing diuretics (B)	3,695	3.1%	42,892	3.1%	-0.033	-0.002
Thiazide diuretics (B)	39,525	33.1%	423,916	31.0%	2.193	0.047
Renin inhibitors (B)	1,567	1.3%	6,555	0.5%	0.836	0.089
Central alpha-2 receptor agonists (B)	4,416	3.7%	56,454	4.1%	-0.419	-0.022
All anti-hypertensive agents (B)	97,296	81.6%	1,097,563	80.1%	1.453	0.037
Lipid lowering agents (B)	83,785	70.3%	882,455	64.4%	5.829	0.125

**Table 1g. Baseline Characteristics of New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Second-Generation Sulfonylurea		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Alpha-glucosidase inhibitors (C)	313	0.3%	2,943	0.2%	0.048	0.010
Biguanides (C)	74,582	62.5%	765,290	55.9%	6.667	0.136
Other DPP-4 inhibitors (C)	935	0.8%	10,752	0.8%	-0.001	0.000
GLP-1 analogues (C)	1,734	1.5%	20,053	1.5%	-0.010	-0.001
Meglitinides (C)	2,104	1.8%	11,128	0.8%	0.952	0.084
Saxagliptin (C)	119,240	100.0%	-	0.0%	100.000	-
Sitagliptin (C)	7,490	6.3%	117,038	8.5%	-2.265	-0.087
Pioglitazone (C)	10,648	8.9%	75,605	5.5%	3.409	0.132
First-generation sulfonylureas (C)	35	0.0%	3,464	0.3%	-0.224	-0.060
Second-generation sulfonylureas (C)	-	0.0%	1,369,494	100.0%	-100.000	-
Long-acting insulins (C)	14,515	12.2%	126,909	9.3%	2.906	0.094
Short-acting insulins (C)	4,700	3.9%	43,946	3.2%	0.733	0.039
Other thiazolidinediones (C)	685	0.6%	4,359	0.3%	0.256	0.038
SGLT-2 inhibitors (C)	887	0.7%	4,624	0.3%	0.406	0.055
Amylin analog-types (C)	49	0.0%	171	0.0%	0.029	0.017
All anti-diabetics (C)	119,240	100.0%	1,369,494	100.0%	0.000	-
Angiotensin-converting enzyme inhibitors (C)	39,105	32.8%	526,269	38.4%	-5.633	-0.118
Alpha blockers (C)	2,098	1.8%	33,523	2.4%	-0.688	-0.048
Angiotensin receptor blockers (C)	29,826	25.0%	246,556	18.0%	7.010	0.171
Beta blockers (C)	36,364	30.5%	457,327	33.4%	-2.897	-0.062
Calcium channel blockers (C)	22,190	18.6%	293,226	21.4%	-2.802	-0.070
Direct vasodilators (C)	1,412	1.2%	25,253	1.8%	-0.660	-0.054
Loop diuretics (C)	13,115	11.0%	184,496	13.5%	-2.473	-0.076
Aldosterone receptor agonists (ARAs) (C)	2,991	2.5%	38,463	2.8%	-0.300	-0.019
Non-ARA potassium sparing diuretics (C)	2,392	2.0%	29,653	2.2%	-0.159	-0.011
Thiazide diuretics (C)	29,923	25.1%	331,484	24.2%	0.890	0.021
Renin inhibitors (C)	894	0.7%	3,535	0.3%	0.492	0.069
Central alpha-2 receptor agonists (C)	2,773	2.3%	38,531	2.8%	-0.488	-0.031
All anti-hypertensive agents (C)	87,700	73.5%	1,037,829	75.8%	-2.233	-0.051
Lipid lowering agents (C)	69,746	58.5%	764,375	55.8%	2.678	0.054
<b>Health Service Utilization Intensity:</b>						
Non-acute institutional stay (IS visit) during prior year	4,574	3.8%	101,105	7.4%	-3.547	-0.155
Any inpatient hospital encounter (IP visit) within prior 30 day	3,474	2.9%	124,827	9.1%	-6.201	-0.263
Any inpatient hospital encounter (IP visit) 31-365 days prior to index date	17,708	14.9%	257,692	18.8%	-3.966	-0.106

**Table 1g. Baseline Characteristics of New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Unmatched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Second-Generation Sulfonylurea		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Any emergency room encounter (ED visit) within prior 30 days	5,105	4.3%	109,120	8.0%	-3.687	-0.154
Any emergency room encounter (ED visit) 31-365 days prior to index date	28,063	23.5%	375,656	27.4%	-3.895	-0.089
	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters (AV)	17.8	15.0	16.9	15.3	0.882	0.058
Mean number of emergency room encounters (ED)	0.5	1.4	0.6	1.7	-0.154	-0.099
Mean number of inpatient hospital encounters (IP)	0.3	0.7	0.4	1.0	-0.158	-0.180
Mean number of non-acute institutional encounters (IS)	0.1	0.4	0.1	0.8	-0.067	-0.111
Mean number of other ambulatory encounters (OA)	4.9	9.1	6.6	12.3	-1.751	-0.161
Mean number of unique drug classes	9.9	5.6	9.4	5.6	0.517	0.092
Mean number of generics	11.2	6.7	10.4	6.5	0.751	0.114
Mean number of filled prescriptions	48.0	39.0	43.1	37.2	4.955	0.130

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

<sup>1</sup>All metrics are based on total number of episodes per group, except for sex, race, and hispanic origin which are based on total number of unique patients

**Table 1h. Baseline Characteristics of New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Second-Generation Sulfonylureas		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Patients	116,777	98.6%	116,777	9.4%	-	-
<b>Demographics<sup>1</sup></b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Mean</b>	<b>Standard Deviation</b>		
Mean age (years)	64.0	11.1	64.0	11.3	-0.008	-0.001
Age (years)						
18-29	682	0.6%	761	0.7%	-0.068	-0.009
30-44	9,815	8.4%	9,999	8.6%	-0.158	-0.006
45-54	19,985	17.1%	20,111	17.2%	-0.108	-0.003
55-64	26,014	22.3%	25,608	21.9%	0.348	0.008
65-74	35,323	30.2%	34,901	29.9%	0.361	0.008
75-84	19,502	16.7%	19,510	16.7%	-0.007	0.000
85+	5,456	4.7%	5,887	5.0%	-0.369	-0.017
Sex						
Female	60,594	51.9%	60,804	52.1%	-0.180	-0.004
Male	56,183	48.1%	55,973	47.9%	0.180	0.004
Race						
American Indian or Alaska Native	809	0.7%	824	0.7%	-0.013	-0.002
Asian	3,522	3.0%	3,529	3.0%	-0.006	0.000
Black or African American	9,583	8.2%	9,491	8.1%	0.079	0.003
Native Hawaiian or Other Pacific Islander	79	0.1%	81	0.1%	-0.002	-0.001
Unknown	49,192	42.1%	49,042	42.0%	0.128	0.003
White	53,592	45.9%	53,810	46.1%	-0.187	-0.004
Year						
2009	723	0.6%	834	0.7%	-0.095	-0.012
2010	6,831	5.8%	6,985	6.0%	-0.132	-0.006
2011	31,305	26.8%	31,442	26.9%	-0.117	-0.003
2012	29,892	25.6%	30,002	25.7%	-0.094	-0.002
2013	21,184	18.1%	21,143	18.1%	0.035	0.001
2014	16,214	13.9%	15,895	13.6%	0.273	0.008
2015	10,628	9.1%	10,476	9.0%	0.130	0.005
<b>Recorded history of:</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Mean</b>	<b>Standard Deviation</b>		
Prior combined comorbidity raw score	1.4	2.4	1.3	2.4	0.005	0.002
	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>		
Acute myocardial infarction prior to 60 days before index date (broad)	1,401	1.2%	1,440	1.2%	-0.033	-0.003
Acute myocardial infarction prior to 60 days before index date (narrow)	563	0.5%	538	0.5%	0.021	0.003

**Table 1h. Baseline Characteristics of New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Second-Generation Sulfonylureas		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Acute myocardial infarction (broad)	1,581	1.4%	1,650	1.4%	-0.059	-0.005
Hospitalized heart failure prior to 60 days before index date	900	0.8%	870	0.7%	0.026	0.003
Other ischemic heart disease	29,090	24.9%	29,088	24.9%	0.002	0.000
Congestive heart failure	11,753	10.1%	11,714	10.0%	0.033	0.001
Other heart disease	37,172	31.8%	37,288	31.9%	-0.099	-0.002
Stroke (broad)	10,981	9.4%	11,079	9.5%	-0.084	-0.003
Stroke (narrow)	656	0.6%	642	0.5%	0.012	0.002
Peripheral arterial disease	9,766	8.4%	9,649	8.3%	0.100	0.004
All coronary revascularization procedures	8,556	7.3%	8,550	7.3%	0.005	0.000
Coronary artery bypass graft	4,286	3.7%	4,223	3.6%	0.054	0.003
Percutaneous coronary intervention	5,644	4.8%	5,693	4.9%	-0.042	-0.002
All carotid revascularization procedures	230	0.2%	232	0.2%	-0.002	0.000
Carotid endarterectomy, etc.	*****	*****	*****	*****	-0.002	0.000
Carotid bypass	*****	*****	*****	*****	0.000	0.000
All lower extremity revascularization	735	0.6%	704	0.6%	0.027	0.003
Lower extremity endarterectomy, etc.	442	0.4%	420	0.4%	0.019	0.003
Lower extremity bypass	103	0.1%	111	0.1%	-0.007	-0.002
Lower extremity amputation	280	0.2%	265	0.2%	0.013	0.003
All Prior Cardiovascular Disease Covariates	52,704	45.1%	52,702	45.1%	0.002	0.000
Asthma	10,865	9.3%	10,934	9.4%	-0.059	-0.002
Cancer (excluding non-melanoma skin cancer)	10,398	8.9%	10,344	8.9%	0.046	0.002
Chronic kidney disease (excluding end stage renal disease)	10,193	8.7%	10,080	8.6%	0.097	0.003
Chronic obstructive pulmonary disease	14,499	12.4%	14,578	12.5%	-0.068	-0.002
Dementia	4,712	4.0%	4,793	4.1%	-0.069	-0.004
Depression	15,798	13.5%	15,696	13.4%	0.087	0.003
End stage renal disease (ESRD)	1,428	1.2%	1,392	1.2%	0.031	0.003
Fracture	4,807	4.1%	4,790	4.1%	0.015	0.001
Human immunodeficiency virus (HIV) / acquired immunodeficiency syndrome	290	0.2%	279	0.2%	0.009	0.002
Hyperlipidemia or lipid disorder	90,693	77.7%	90,907	77.8%	-0.183	-0.004
Hypertension	95,525	81.8%	95,570	81.8%	-0.039	-0.001
Hypoglycemia	5,529	4.7%	5,564	4.8%	-0.030	-0.001
Obesity (or weight gain)	23,896	20.5%	23,818	20.4%	0.067	0.002
Osteoporosis	9,548	8.2%	9,545	8.2%	0.003	0.000

**Table 1h. Baseline Characteristics of New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Second-Generation Sulfonylureas		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Peripheral neuropathy	22,743	19.5%	22,802	19.5%	-0.051	-0.001
Tobacco use	11,965	10.2%	11,908	10.2%	0.049	0.002
All comorbidity covariates	111,149	95.2%	110,557	94.7%	0.507	0.023
<b>History of use:</b>						
Alpha-glucosidase inhibitors (B)	568	0.5%	702	0.6%	-0.115	-0.016
Biguanides (B)	77,215	66.1%	77,441	66.3%	-0.194	-0.004
Other dipeptidyl peptidase-4 (DPP-4) inhibitors (B)	2,490	2.1%	2,203	1.9%	0.246	0.018
Glucagon-like peptide-1 (GLP-1) analogues (B)	4,378	3.7%	4,403	3.8%	-0.021	-0.001
Meglitinides (B)	3,197	2.7%	3,304	2.8%	-0.092	-0.006
Saxagliptin (B)	-	0.0%	-	0.0%	0.000	-
Sitagliptin (B)	20,101	17.2%	20,074	17.2%	0.023	0.001
Pioglitazone (B)	20,051	17.2%	20,107	17.2%	-0.048	-0.001
First-generation sulfonylureas (B)	45	0.0%	153	0.1%	-0.092	-0.032
Second-generation sulfonylureas (B)	-	0.0%	-	0.0%	0.000	-
Long-acting insulins (B)	20,495	17.6%	20,673	17.7%	-0.152	-0.004
Short-acting insulins (B)	9,382	8.0%	9,514	8.1%	-0.113	-0.004
Other thiazolidinediones (B)	2,658	2.3%	2,648	2.3%	0.009	0.001
Sodium-glucose cotransporter-2 (SGLT-2) inhibitors (B)	1,004	0.9%	1,024	0.9%	-0.017	-0.002
Amylin analog-types (B)	161	0.1%	132	0.1%	0.025	0.007
All anti-diabetics (B)	96,739	82.8%	95,719	82.0%	0.873	0.023
Angiotensin-converting enzyme inhibitors (B)	49,544	42.4%	49,452	42.3%	0.079	0.002
Alpha blockers (B)	2,885	2.5%	3,052	2.6%	-0.143	-0.009
Angiotensin receptor blockers (B)	34,893	29.9%	35,172	30.1%	-0.239	-0.005
Beta blockers (B)	44,107	37.8%	43,814	37.5%	0.251	0.005
Calcium channel blockers (B)	27,765	23.8%	27,941	23.9%	-0.151	-0.004
Direct vasodilators (B)	2,184	1.9%	2,350	2.0%	-0.142	-0.010
Loop diuretics (B)	19,760	16.9%	19,983	17.1%	-0.191	-0.005
Aldosterone receptor agonists (ARAs) (B)	4,362	3.7%	4,050	3.5%	0.267	0.014
Non-ARA potassium sparing diuretics (B)	3,648	3.1%	3,465	3.0%	0.157	0.009
Thiazide diuretics (B)	38,834	33.3%	38,673	33.1%	0.138	0.003
Renin inhibitors (B)	1,554	1.3%	833	0.7%	0.617	0.061
Central alpha-2 receptor agonists (B)	4,388	3.8%	4,427	3.8%	-0.033	-0.002
All anti-hypertensive agents (B)	95,398	81.7%	95,067	81.4%	0.283	0.007
Lipid lowering agents (B)	81,920	70.2%	82,124	70.3%	-0.175	-0.004

**Table 1h. Baseline Characteristics of New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Second-Generation Sulfonylureas		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Alpha-glucosidase inhibitors (C)	310	0.3%	449	0.4%	-0.119	-0.021
Biguanides (C)	72,580	62.2%	72,119	61.8%	0.395	0.008
Other DPP-4 inhibitors (C)	907	0.8%	1,686	1.4%	-0.667	-0.064
GLP-1 analogues (C)	1,704	1.5%	1,736	1.5%	-0.027	-0.002
Meglitinides (C)	2,075	1.8%	1,827	1.6%	0.212	0.017
Saxagliptin (C)	116,777	100.0%	-	0.0%	100.000	-
Sitagliptin (C)	7,448	6.4%	7,444	6.4%	0.003	0.000
Pioglitazone (C)	10,423	8.9%	10,281	8.8%	0.122	0.004
First-generation sulfonylureas (C)	34	0.0%	79	0.1%	-0.039	-0.018
Second-generation sulfonylureas (C)	-	0.0%	116,777	100.0%	-100.000	-
Long-acting insulins (C)	14,159	12.1%	14,233	12.2%	-0.063	-0.002
Short-acting insulins (C)	4,594	3.9%	4,703	4.0%	-0.093	-0.005
Other thiazolidinediones (C)	676	0.6%	675	0.6%	0.001	0.000
SGLT-2 inhibitors (C)	791	0.7%	789	0.7%	0.002	0.000
Amylin analog-types (C)	47	0.0%	44	0.0%	0.003	0.001
All anti-diabetics (C)	116,777	100.0%	116,777	100.0%	0.000	-
Angiotensin-converting enzyme inhibitors (C)	38,457	32.9%	38,124	32.6%	0.285	0.006
Alpha blockers (C)	2,081	1.8%	2,223	1.9%	-0.122	-0.009
Angiotensin receptor blockers (C)	29,123	24.9%	29,233	25.0%	-0.094	-0.002
Beta blockers (C)	35,907	30.7%	35,521	30.4%	0.331	0.007
Calcium channel blockers (C)	21,927	18.8%	22,028	18.9%	-0.086	-0.002
Direct vasodilators (C)	1,405	1.2%	1,575	1.3%	-0.146	-0.013
Loop diuretics (C)	13,024	11.2%	13,721	11.7%	-0.597	-0.019
Aldosterone receptor agonists (ARAs) (C)	2,959	2.5%	2,863	2.5%	0.082	0.005
Non-ARA potassium sparing diuretics (C)	2,360	2.0%	2,313	2.0%	0.040	0.003
Thiazide diuretics (C)	29,416	25.2%	29,278	25.1%	0.118	0.003
Renin inhibitors (C)	891	0.8%	442	0.4%	0.384	0.051
Central alpha-2 receptor agonists (C)	2,758	2.4%	2,869	2.5%	-0.095	-0.006
All anti-hypertensive agents (C)	86,122	73.7%	86,761	74.3%	-0.547	-0.012
Lipid lowering agents (C)	68,318	58.5%	68,273	58.5%	0.039	0.001
<b>Health Service Utilization Intensity:</b>						
Non-acute institutional stay (IS visit) during prior year	4,567	3.9%	4,557	3.9%	0.009	0.000
Any inpatient hospital encounter (IP visit) within prior 30 day	3,462	3.0%	3,519	3.0%	-0.049	-0.003
Any inpatient hospital encounter (IP visit) 31-365 days prior to index date	17,553	15.0%	17,509	15.0%	0.038	0.001

**Table 1h. Baseline Characteristics of New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) (Matched, Aggregated), Ratio: 1:1, Caliper:0.01**

Characteristic	Medical Product				Covariate Balance	
	Saxagliptin		Second-Generation Sulfonylureas		Absolute Difference	Standardized Difference
	Number	Percent	Number	Percent		
Any emergency room encounter (ED visit) within prior 30 days	5,075	4.3%	5,115	4.4%	-0.034	-0.002
Any emergency room encounter (ED visit) 31-365 days prior to index date	27,669	23.7%	27,761	23.8%	-0.079	-0.002
	Mean	Standard Deviation	Mean	Standard Deviation		
Mean number of ambulatory encounters (AV)	17.9	15.1	17.9	15.7	0.015	0.001
Mean number of emergency room encounters (ED)	0.5	1.5	0.5	1.4	-0.022	-0.015
Mean number of inpatient hospital encounters (IP)	0.3	0.7	0.3	0.8	-0.007	-0.009
Mean number of non-acute institutional encounters (IS)	0.1	0.4	0.1	0.5	-0.003	-0.005
Mean number of other ambulatory encounters (OA)	4.9	9.2	5.1	10.2	-0.189	-0.019
Mean number of unique drug classes	10.0	5.6	9.9	5.7	0.023	0.004
Mean number of generics	11.2	6.7	11.2	6.8	-0.004	-0.001
Mean number of filled prescriptions	48.2	39.2	47.3	39.3	0.974	0.025

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

<sup>1</sup>All metrics are based on total number of episodes per group, except for sex, race, and hispanic origin which are based on total number of unique patients

**Table 2. Effect Estimates for New Users of Saxagliptin vs New Users of Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type**

Medical Product	Number of New Users	Person-Years at Risk	Average Person Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1000 Person-Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person-Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
<b>Unmatched Analysis (Site-adjusted only)</b>											
Saxagliptin	184,312	106,821.26	211.69	0.58	1,313	12.29	7.12	-5.97	-3.80	0.72 ( 0.68, 0.76)	<0.001
Sitagliptin	824,877	493,398.91	218.47	0.60	9,009	18.26	10.92				
<b>1:1 Matched Conditional Predefined Analysis; Caliper= 0.01</b>											
Saxagliptin	182,098	47,100.12	94.47	0.26	652	13.84	3.58	-2.51	-0.65	0.85 ( 0.76, 0.94)	0.002
Sitagliptin	182,098	47,100.12	94.47	0.26	770	16.35	4.23				
<b>1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01</b>											
Saxagliptin	182,098	105,888.94	212.39	0.58	1,313	12.40	7.21	-1.74	-1.83	0.90 ( 0.83, 0.96)	0.003
Sitagliptin	182,098	116,463.55	233.60	0.64	1,647	14.14	9.04				

**Table 3. Effect Estimates for New Users of Saxagliptin vs New Users of Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type and Prior Cardiovascular Disease Status**

Medical Product	Number of New Users	Person-Years at Risk	Average Person Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1000 Person-Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person-Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
<b>No prior cardiovascular disease covariates</b>											
Unmatched Analysis (Site-adjusted only)											
Saxagliptin	97,509	55,907.43	209.42	0.57	153	2.74	1.57	-0.79	-0.54	0.87 ( 0.74, 1.04)	0.129
Sitagliptin	408,147	243,495.04	217.90	0.60	859	3.53	2.10				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	95,801	24,131.74	92.00	0.25	72	2.98	0.75	0.41	0.10	1.16 ( 0.83, 1.63)	0.388
Sitagliptin	95,801	24,131.74	92.00	0.25	62	2.57	0.65				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	95,801	55,201.62	210.46	0.58	153	2.77	1.60	-0.49	-0.43	0.92 ( 0.74, 1.14)	0.448
Sitagliptin	95,801	59,526.14	226.95	0.62	194	3.26	2.03				
<b>Presence of prior cardiovascular disease covariates</b>											
Unmatched Analysis (Site-adjusted only)											
Saxagliptin	86,803	50,913.83	214.24	0.59	1,160	22.78	13.36	-9.83	-6.19	0.71 ( 0.67, 0.76)	<0.001
Sitagliptin	416,730	249,903.87	219.03	0.60	8,150	32.61	19.56				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	86,289	22,970.56	97.23	0.27	581	25.29	6.73	-3.61	-0.96	0.88 ( 0.78, 0.98)	0.019
Sitagliptin	86,289	22,970.56	97.23	0.27	664	28.91	7.70				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	86,289	50,680.79	214.53	0.59	1,160	22.89	13.44	-2.24	-3.21	0.90 ( 0.84, 0.98)	0.011
Sitagliptin	86,289	57,187.82	242.07	0.66	1,437	25.13	16.65				

**Table 4. Effect Estimates for New Users of Saxagliptin vs New Users of Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type and Sex**

Medical Product	Sex	Number of New Users	Person-Years at Risk	Average Person Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1000 Person-Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person-Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
<b>Unmatched Analysis (Site-adjusted only)</b>												
Saxagliptin	Male	90,306	53,858.83	217.84	0.60	635	11.79	7.03	-4.70	-3.00	0.77 ( 0.71, 0.84)	<0.001
Sitagliptin	Male	389,096	236,653.50	222.15	0.61	3,903	16.49	10.03				
<b>1:1 Matched Conditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	Male	88,931	23,594.92	96.91	0.27	302	12.80	3.40	-2.29	-0.61	0.85 ( 0.73, 0.99)	0.035
Sitagliptin	Male	88,931	23,594.92	96.91	0.27	356	15.09	4.00				
<b>1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	Male	88,931	53,273.75	218.80	0.60	635	11.92	7.14	-1.44	-1.53	0.92 ( 0.82, 1.02)	0.099
Sitagliptin	Male	88,931	57,702.03	236.99	0.65	771	13.36	8.67				
<b>Unmatched Analysis (Site-adjusted only)</b>												
Saxagliptin	Female	94,006	52,962.44	205.78	0.56	678	12.80	7.21	-7.09	-4.50	0.68 ( 0.63, 0.74)	<0.001
Sitagliptin	Female	435,781	256,745.41	215.19	0.59	5,106	19.89	11.72				
<b>1:1 Matched Conditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	Female	93,136	23,585.77	92.50	0.25	354	15.01	3.80	-2.71	-0.69	0.85 ( 0.74, 0.98)	0.021
Sitagliptin	Female	93,136	23,585.77	92.50	0.25	418	17.72	4.49				
<b>1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	Female	93,136	52,603.91	206.30	0.56	678	12.89	7.28	-3.23	-2.89	0.81 ( 0.74, 0.90)	<0.001
Sitagliptin	Female	93,136	58,746.03	230.38	0.63	947	16.12	10.17				

**Table 5. Effect Estimates for New Users of Saxagliptin vs New Users of Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type and Age Group**

Medical Product	Age Group (years)	Number of New Users	Person-Years at Risk	Average Person Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1000 Person-Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person-Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
<b>Unmatched Analysis (Site-adjusted only)</b>												
Saxagliptin	18-64	79,454	41,098.18	188.93	0.52	165	4.01	2.08	-3.47	-2.00	0.68 ( 0.57, 0.80)	<0.001
Sitagliptin	18-64	316,637	172,524.28	199.01	0.54	1,291	7.48	4.08				
<b>1:1 Matched Conditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	18-64	77,494	17,217.95	81.15	0.22	94	5.46	1.21	-1.63	-0.36	0.77 ( 0.59, 1.01)	0.057
Sitagliptin	18-64	77,494	17,217.95	81.15	0.22	122	7.09	1.57				
<b>1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	18-64	77,494	40,333.99	190.10	0.52	164	4.07	2.12	-1.19	-0.76	0.84 ( 0.69, 1.03)	0.103
Sitagliptin	18-64	77,494	42,404.32	199.86	0.55	223	5.26	2.88				
<b>Unmatched Analysis (Site-adjusted only)</b>												
Saxagliptin	65+	104,858	65,723.08	228.93	0.63	1,148	17.47	10.95	-6.59	-4.24	0.72 ( 0.68, 0.77)	<0.001
Sitagliptin	65+	508,240	320,874.63	230.60	0.63	7,718	24.05	15.19				
<b>1:1 Matched Conditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	65+	104,565	29,826.53	104.19	0.29	579	19.41	5.54	-3.45	-0.99	0.85 ( 0.76, 0.95)	0.004
Sitagliptin	65+	104,565	29,826.53	104.19	0.29	682	22.87	6.52				
<b>1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	65+	104,565	65,542.81	228.94	0.63	1,148	17.52	10.98	-2.37	-2.96	0.87 ( 0.80, 0.94)	<0.001
Sitagliptin	65+	104,565	73,314.55	256.09	0.70	1,458	19.89	13.94				

**Table 6. Effect Estimates for New Users of Saxagliptin vs New Users of Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type**

Medical Product	Number of New Users	Person-Years at Risk	Average Person Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1000 Person-Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person-Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
<b>Unmatched Analysis (Site-adjusted only)</b>											
Saxagliptin	163,182	88,827.73	198.82	0.54	476	5.36	2.92	-2.39	-1.55	0.69 ( 0.62, 0.76)	<0.001
Pioglitazone	331,580	191,164.15	210.58	0.58	1,481	7.75	4.47				
<b>1:1 Matched Conditional Predefined Analysis; Caliper= 0.01</b>											
Saxagliptin	136,510	32,310.24	86.45	0.24	177	5.48	1.30	-3.59	-0.85	0.60 ( 0.50, 0.73)	<0.001
Pioglitazone	136,510	32,310.24	86.45	0.24	293	9.07	2.15				
<b>1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01</b>											
Saxagliptin	136,510	74,670.81	199.79	0.55	427	5.72	3.13	-2.99	-1.63	0.67 ( 0.60, 0.76)	<0.001
Pioglitazone	136,510	74,639.37	199.71	0.55	650	8.71	4.76				

**Table 7. Effect Estimates for New Users of Saxagliptin vs New Users of Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type and Prior Cardiovascular Disease Status**

Medical Product	Number of New Users	Person-Years at Risk	Average Person Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1000 Person-Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person-Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
<b>No prior cardiovascular disease covariates</b>											
Unmatched Analysis (Site-adjusted only)											
Saxagliptin	97,763	52,147.64	194.83	0.53	125	2.40	1.28	-1.72	-1.11	0.60 ( 0.50, 0.74)	<0.001
Pioglitazone	212,690	123,111.51	211.42	0.58	507	4.12	2.38				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	79,933	18,560.75	84.81	0.23	46	2.48	0.58	-1.99	-0.46	0.55 ( 0.39, 0.79)	0.001
Pioglitazone	79,933	18,560.75	84.81	0.23	83	4.47	1.04				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	79,933	43,025.03	196.60	0.54	113	2.63	1.41	-1.95	-1.05	0.60 ( 0.47, 0.75)	<0.001
Pioglitazone	79,933	43,047.29	196.70	0.54	197	4.58	2.46				
<b>Presence of prior cardiovascular disease covariates</b>											
Unmatched Analysis (Site-adjusted only)											
Saxagliptin	65,419	36,680.08	204.79	0.56	351	9.57	5.37	-4.74	-2.83	0.66 ( 0.59, 0.75)	<0.001
Pioglitazone	118,890	68,052.63	209.07	0.57	974	14.31	8.19				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	56,446	13,863.47	89.71	0.25	141	10.17	2.50	-5.27	-1.29	0.66 ( 0.53, 0.81)	<0.001
Pioglitazone	56,446	13,863.47	89.71	0.25	214	15.44	3.79				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	56,446	31,617.20	204.59	0.56	322	10.18	5.70	-4.74	-2.71	0.69 ( 0.60, 0.79)	<0.001
Pioglitazone	56,446	31,832.95	205.98	0.56	475	14.92	8.42				

**Table 8. Effect Estimates for New Users of Saxagliptin vs New Users of Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type and Sex**

Medical Product	Sex	Number of New Users	Person-Years at Risk	Average Person Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1000 Person-Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person-Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
<b>Unmatched Analysis (Site-adjusted only)</b>												
Saxagliptin	Male	78,590	43,581.10	202.54	0.55	216	4.96	2.75	-1.07	-0.96	0.84 ( 0.72, 0.98)	0.029
Pioglitazone	Male	174,437	107,324.56	224.72	0.62	647	6.03	3.71				
<b>1:1 Matched Conditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	Male	66,451	16,420.07	90.25	0.25	90	5.48	1.35	-1.64	-0.41	0.77 ( 0.58, 1.01)	0.061
Pioglitazone	Male	66,451	16,420.07	90.25	0.25	117	7.13	1.76				
<b>1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	Male	66,451	37,159.90	204.25	0.56	200	5.38	3.01	-1.72	-1.11	0.79 ( 0.66, 0.95)	0.012
Pioglitazone	Male	66,451	38,600.59	212.17	0.58	274	7.10	4.12				
<b>Unmatched Analysis (Site-adjusted only)</b>												
Saxagliptin	Female	84,592	45,246.63	195.37	0.53	260	5.75	3.07	-4.20	-2.23	0.57 ( 0.50, 0.66)	<0.001
Pioglitazone	Female	157,143	83,839.59	194.87	0.53	834	9.95	5.31				
<b>1:1 Matched Conditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	Female	69,954	16,060.71	83.86	0.23	95	5.92	1.36	-5.60	-1.29	0.51 ( 0.40, 0.66)	<0.001
Pioglitazone	Female	69,954	16,060.71	83.86	0.23	185	11.52	2.64				
<b>1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	Female	69,954	37,626.61	196.46	0.54	224	5.95	3.20	-5.59	-2.73	0.53 ( 0.45, 0.62)	<0.001
Pioglitazone	Female	69,954	35,960.74	187.76	0.51	415	11.54	5.93				

**Table 9. Effect Estimates for New Users of Saxagliptin vs New Users of Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type and Age Group**

Medical Product	Age Group (years)	Number of New Users	Person-Years at Risk	Average Person Days at Risk	Average Person-Years at Risk	Number of Events	Incidence	Risk per	Incidence	Difference	Hazard Ratio (95% Confidence Interval)	Wald P-Value
							Rate per 1000 Person-Years	1000 New Users	Rate per 1000 Person-Years	in Risk per 1000 New Users		
<b>Unmatched Analysis (Site-adjusted only)</b>												
Saxagliptin	18-64	78,369	38,608.82	179.94	0.49	57	1.48	0.73	-1.39	-0.79	0.55 ( 0.41, 0.74)	<0.001
Pioglitazone	18-64	157,828	83,861.01	194.07	0.53	240	2.86	1.52				
<b>1:1 Matched Conditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	18-64	58,772	12,177.43	75.68	0.21	22	1.81	0.37	-1.40	-0.29	0.56 ( 0.33, 0.95)	0.032
Pioglitazone	18-64	58,772	12,177.43	75.68	0.21	39	3.20	0.66				
<b>1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	18-64	58,772	28,999.70	180.22	0.49	48	1.66	0.82	-1.77	-0.80	0.51 ( 0.36, 0.73)	<0.001
Pioglitazone	18-64	58,772	27,756.74	172.50	0.47	95	3.42	1.62				
<b>Unmatched Analysis (Site-adjusted only)</b>												
Saxagliptin	65+	84,813	50,218.90	216.27	0.59	419	8.34	4.94	-3.22	-2.20	0.70 ( 0.63, 0.78)	<0.001
Pioglitazone	65+	173,752	107,303.13	225.57	0.62	1,241	11.57	7.14				
<b>1:1 Matched Conditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	65+	77,513	20,256.36	95.45	0.26	158	7.80	2.04	-5.04	-1.32	0.61 ( 0.50, 0.74)	<0.001
Pioglitazone	65+	77,513	20,256.36	95.45	0.26	260	12.84	3.35				
<b>1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	65+	77,513	45,644.77	215.08	0.59	378	8.28	4.88	-3.99	-2.57	0.68 ( 0.59, 0.77)	<0.001
Pioglitazone	65+	77,513	47,028.95	221.61	0.61	577	12.27	7.44				

**Table 10. Effect Estimates for New Users of Saxagliptin vs New Users of Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type**

Medical Product	Number of New Users	Person-Years at Risk	Average Person Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1000 Person-Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person-Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
<b>Unmatched Analysis (Site-adjusted only)</b>											
Saxagliptin	193,799	109,660.67	206.68	0.57	1,092	9.96	5.63	-22.47	-6.07	0.38 ( 0.36, 0.40)	<0.001
Long-Acting Insulins	1,122,474	404,940.68	131.77	0.36	13,133	32.43	11.70				
<b>1:1 Matched Conditional Predefined Analysis; Caliper= 0.01</b>											
Saxagliptin	171,769	33,734.05	71.73	0.20	426	12.63	2.48	-6.97	-1.37	0.64 ( 0.57, 0.73)	<0.001
Long-Acting Insulins	171,769	33,734.05	71.73	0.20	661	19.59	3.85				
<b>1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01</b>											
Saxagliptin	171,769	95,352.04	202.76	0.56	1,046	10.97	6.09	-6.78	-0.95	0.67 ( 0.61, 0.73)	<0.001
Long-Acting Insulins	171,769	68,170.83	144.96	0.40	1,210	17.75	7.04				

**Table 11. Effect Estimates for New Users of Saxagliptin vs New Users of Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type and Prior Cardiovascular Disease Status**

Medical Product	Number of New Users	Person-Years at Risk	Average Person Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1000 Person-Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person-Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
<b>No prior cardiovascular disease covariates</b>											
Unmatched Analysis (Site-adjusted only)											
Saxagliptin	107,149	59,928.85	204.29	0.56	134	2.24	1.25	-3.49	-0.88	0.45 ( 0.38, 0.54)	<0.001
Long-Acting Insulins	498,192	185,268.12	135.83	0.37	1,060	5.72	2.13				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	91,884	17,468.98	69.44	0.19	35	2.00	0.38	-3.55	-0.67	0.36 ( 0.25, 0.53)	<0.001
Long-Acting Insulins	91,884	17,468.98	69.44	0.19	97	5.55	1.06				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	91,884	50,531.91	200.87	0.55	124	2.45	1.35	-2.56	-0.57	0.53 ( 0.42, 0.66)	<0.001
Long-Acting Insulins	91,884	35,088.52	139.48	0.38	176	5.02	1.92				
<b>Presence of prior cardiovascular disease covariates</b>											
Unmatched Analysis (Site-adjusted only)											
Saxagliptin	86,650	49,731.83	209.63	0.57	958	19.26	11.06	-35.70	-8.28	0.41 ( 0.39, 0.44)	<0.001
Long-Acting Insulins	624,282	219,672.56	128.52	0.35	12,073	54.96	19.34				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	79,824	16,184.60	74.06	0.20	391	24.16	4.90	-7.97	-1.62	0.75 ( 0.66, 0.86)	<0.001
Long-Acting Insulins	79,824	16,184.60	74.06	0.20	520	32.13	6.51				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	79,824	44,825.96	205.11	0.56	927	20.68	11.61	-8.98	-0.65	0.73 ( 0.67, 0.80)	<0.001
Long-Acting Insulins	79,824	33,008.95	151.04	0.41	979	29.66	12.26				

**Table 12. Effect Estimates for New Users of Saxagliptin vs New Users of Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type and Sex**

Medical Product	Sex	Number of New Users	Person-Years at Risk	Average Person Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1000 Person-Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person-Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
<b>Unmatched Analysis (Site-adjusted only)</b>												
Saxagliptin	Male	95,928	55,491.38	211.29	0.58	536	9.66	5.59	-21.43	-5.57	0.39 ( 0.36, 0.43)	<0.001
Long-Acting Insulins	Male	557,326	200,110.87	131.14	0.36	6,221	31.09	11.16				
<b>1:1 Matched Conditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	Male	83,581	16,487.24	72.05	0.20	211	12.80	2.52	-5.28	-1.04	0.71 ( 0.59, 0.84)	<0.001
Long-Acting Insulins	Male	83,581	16,487.24	72.05	0.20	298	18.07	3.57				
<b>1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	Male	83,581	47,614.44	208.08	0.57	514	10.80	6.15	-5.73	-0.36	0.71 ( 0.63, 0.81)	<0.001
Long-Acting Insulins	Male	83,581	32,922.14	143.87	0.39	544	16.52	6.51				
<b>Unmatched Analysis (Site-adjusted only)</b>												
Saxagliptin	Female	97,871	54,169.30	202.16	0.55	556	10.26	5.68	-23.48	-6.55	0.36 ( 0.33, 0.40)	<0.001
Long-Acting Insulins	Female	565,148	204,829.81	132.38	0.36	6,912	33.75	12.23				
<b>1:1 Matched Conditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	Female	88,117	17,177.42	71.20	0.19	212	12.34	2.41	-9.61	-1.87	0.56 ( 0.48, 0.67)	<0.001
Long-Acting Insulins	Female	88,117	17,177.42	71.20	0.19	377	21.95	4.28				
<b>1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	Female	88,117	47,753.71	197.94	0.54	535	11.20	6.07	-7.45	-1.40	0.65 ( 0.58, 0.72)	<0.001
Long-Acting Insulins	Female	88,117	35,284.43	146.26	0.40	658	18.65	7.47				

**Table 13. Effect Estimates for New Users of Saxagliptin vs New Users of Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type and Age Group**

Medical Product	Age Group (years)	Number of New Users	Person-Years at Risk	Average Person Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1000 Person-Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person-Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
<b>Unmatched Analysis (Site-adjusted only)</b>												
Saxagliptin	18-64	85,187	43,261.98	185.49	0.51	120	2.77	1.41	-13.19	-3.92	0.27 ( 0.22, 0.33)	<0.001
Long-Acting Insulins	18-64	487,956	162,924.21	121.95	0.33	2,601	15.96	5.33				
<b>1:1 Matched Conditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	18-64	70,301	11,780.84	61.21	0.17	46	3.90	0.65	-2.04	-0.34	0.66 ( 0.45, 0.95)	0.027
Long-Acting Insulins	18-64	70,301	11,780.84	61.21	0.17	70	5.94	1.00				
<b>1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	18-64	70,301	34,844.11	181.03	0.50	116	3.33	1.65	-3.01	-0.41	0.61 ( 0.47, 0.78)	<0.001
Long-Acting Insulins	18-64	70,301	22,883.21	118.89	0.33	145	6.34	2.06				
<b>Unmatched Analysis (Site-adjusted only)</b>												
Saxagliptin	65+	108,612	66,398.69	223.29	0.61	972	14.64	8.95	-28.88	-7.65	0.38 ( 0.35, 0.40)	<0.001
Long-Acting Insulins	65+	634,518	242,016.47	139.31	0.38	10,532	43.52	16.60				
<b>1:1 Matched Conditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	65+	101,255	21,971.94	79.26	0.22	377	17.16	3.72	-8.97	-1.95	0.66 ( 0.58, 0.75)	<0.001
Long-Acting Insulins	65+	101,255	21,971.94	79.26	0.22	574	26.12	5.67				
<b>1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	65+	101,255	60,541.34	218.39	0.60	937	15.48	9.25	-7.02	-0.80	0.72 ( 0.65, 0.78)	<0.001
Long-Acting Insulins	65+	101,255	45,243.12	163.20	0.45	1,018	22.50	10.05				

**Table 14. Effect Estimates for New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type**

Medical Product	Number of New Users	Person-Years at Risk	Average Person Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1000 Person-Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person-Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
<b>Unmatched Analysis (Site-adjusted only)</b>											
Saxagliptin	119,240	64,076.32	196.28	0.54	658	10.27	5.52				
Second-Generation Sulfonylureas	1,369,494	907,552.79	242.05	0.66	15,869	17.49	11.59	-7.22	-6.07	0.60 ( 0.56, 0.65)	<0.001
<b>1:1 Matched Conditional Predefined Analysis; Caliper= 0.01</b>											
Saxagliptin	116,777	29,097.45	91.01	0.25	343	11.79	2.94				
Second-Generation Sulfonylureas	116,777	29,097.45	91.01	0.25	511	17.56	4.38	-5.77	-1.44	0.67 ( 0.59, 0.77)	<0.001
<b>1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01</b>											
Saxagliptin	116,777	62,851.14	196.58	0.54	656	10.44	5.62				
Second-Generation Sulfonylureas	116,777	77,584.02	242.66	0.66	1,141	14.71	9.77	-4.27	-4.15	0.72 ( 0.66, 0.80)	<0.001

**Table 15. Effect Estimates for New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type and Prior Cardiovascular Disease Status**

Medical Product	Number of New Users	Person-Years at Risk	Average Person Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1000 Person-Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person-Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
<b>No prior cardiovascular disease covariates</b>											
Unmatched Analysis (Site-adjusted only)											
Saxagliptin	65,932	35,070.20	194.28	0.53	64	1.82	0.97	-1.72	-1.39	0.60 ( 0.47, 0.78)	<0.001
Second-Generation Sulfonylureas	737,350	490,066.55	242.76	0.66	1,738	3.55	2.36				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	64,054	15,312.42	87.31	0.24	27	1.76	0.42	-1.11	-0.27	0.61 ( 0.38, 0.99)	0.046
Second-Generation Sulfonylureas	64,054	15,312.42	87.31	0.24	44	2.87	0.69				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	64,054	34,145.19	194.70	0.53	64	1.87	1.00	-1.03	-0.83	0.71 ( 0.52, 0.97)	0.029
Second-Generation Sulfonylureas	64,054	40,305.63	229.83	0.63	117	2.90	1.83				
<b>Presence of prior cardiovascular disease covariates</b>											
Unmatched Analysis (Site-adjusted only)											
Saxagliptin	53,308	29,006.12	198.74	0.54	594	20.48	11.14	-13.37	-11.21	0.59 ( 0.55, 0.65)	<0.001
Second-Generation Sulfonylureas	632,144	417,486.24	241.22	0.66	14,131	33.85	22.35				
1:1 Matched Conditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	52,687	13,775.44	95.50	0.26	326	23.67	6.19	-8.49	-2.22	0.74 ( 0.64, 0.85)	<0.001
Second-Generation Sulfonylureas	52,687	13,775.44	95.50	0.26	443	32.16	8.41				
1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01											
Saxagliptin	52,687	28,697.37	198.94	0.54	594	20.70	11.27	-6.16	-7.65	0.75 ( 0.68, 0.83)	<0.001
Second-Generation Sulfonylureas	52,687	37,124.79	257.37	0.70	997	26.86	18.92				

**Table 16. Effect Estimates for New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type and Sex**

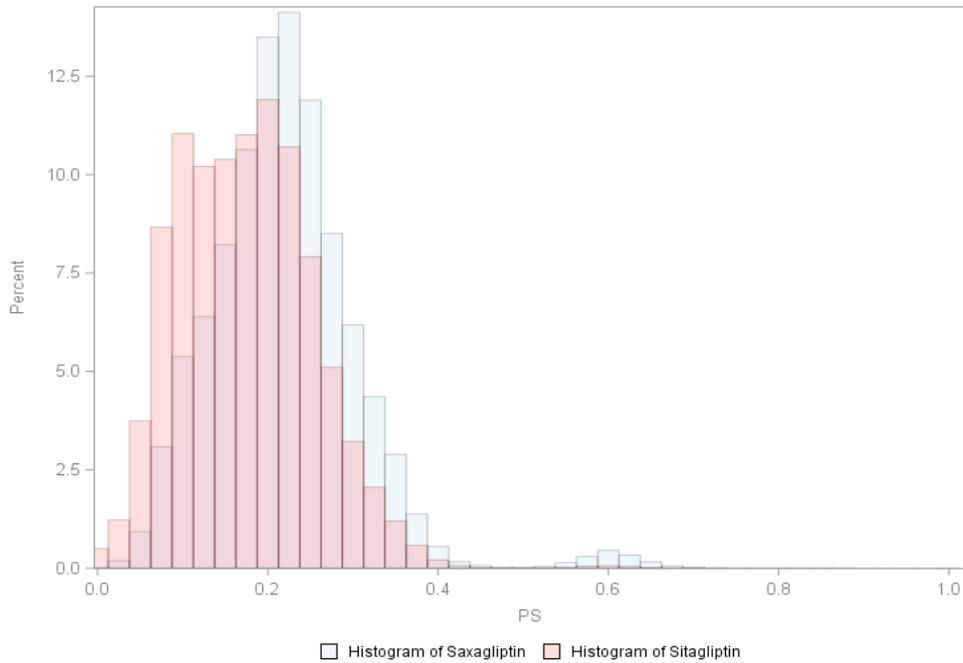
Medical Product	Sex	Number of New Users	Person-Years at Risk	Average Person Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1000 Person-Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person-Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
<b>Unmatched Analysis (Site-adjusted only)</b>												
Saxagliptin	Male	57,593	31,907.56	202.36	0.55	294	9.21	5.10	-7.58	-6.31	0.58 ( 0.52, 0.66)	<0.001
Second-Generation Sulfonylureas	Male	682,561	464,167.24	248.38	0.68	7,794	16.79	11.42				
<b>1:1 Matched Conditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	Male	56,056	14,453.57	94.18	0.26	149	10.31	2.66	-8.16	-2.11	0.56 ( 0.46, 0.68)	<0.001
Second-Generation Sulfonylureas	Male	56,056	14,453.57	94.18	0.26	267	18.47	4.76				
<b>1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	Male	56,056	31,142.21	202.92	0.56	292	9.38	5.21	-5.28	-4.76	0.66 ( 0.57, 0.76)	<0.001
Second-Generation Sulfonylureas	Male	56,056	38,143.98	248.54	0.68	559	14.65	9.97				
<b>Unmatched Analysis (Site-adjusted only)</b>												
Saxagliptin	Female	61,647	32,168.76	190.60	0.52	364	11.32	5.90	-6.90	-5.85	0.62 ( 0.56, 0.69)	<0.001
Second-Generation Sulfonylureas	Female	686,933	443,385.55	235.75	0.65	8,075	18.21	11.76				
<b>1:1 Matched Conditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	Female	60,688	14,759.10	88.83	0.24	198	13.42	3.26	-4.34	-1.05	0.76 ( 0.63, 0.91)	0.003
Second-Generation Sulfonylureas	Female	60,688	14,759.10	88.83	0.24	262	17.75	4.32				
<b>1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	Female	60,688	31,697.99	190.77	0.52	364	11.48	6.00	-3.27	-3.58	0.78 ( 0.69, 0.90)	<0.001
Second-Generation Sulfonylureas	Female	60,688	39,377.66	236.99	0.65	581	14.75	9.57				

**Table 17. Effect Estimates for New Users of Saxagliptin vs New Users of Second-Generation Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015, (Updated) by Analysis Type and Age Group**

Medical Product	Age Group (years)	Number of New Users	Person-Years at Risk	Average Person Days at Risk	Average Person-Years at Risk	Number of Events	Incidence Rate per 1000 Person-Years	Risk per 1000 New Users	Incidence Rate Difference per 1000 Person-Years	Difference in Risk per 1000 New Users	Hazard Ratio (95% Confidence Interval)	Wald P-Value
<b>Unmatched Analysis (Site-adjusted only)</b>												
Saxagliptin	18-64	58,656	28,467.39	177.27	0.49	100	3.51	1.70	-3.69	-2.36	0.59 ( 0.48, 0.72)	<0.001
Second-Generation Sulfonylureas	18-64	589,829	332,860.12	206.12	0.56	2,399	7.21	4.07				
<b>1:1 Matched Conditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	18-64	56,451	11,912.51	77.08	0.21	49	4.11	0.87	-2.85	-0.60	0.59 ( 0.41, 0.84)	0.003
Second-Generation Sulfonylureas	18-64	56,451	11,912.51	77.08	0.21	83	6.97	1.47				
<b>1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	18-64	56,451	27,386.53	177.20	0.49	98	3.58	1.74	-2.28	-1.35	0.67 ( 0.52, 0.86)	0.001
Second-Generation Sulfonylureas	18-64	56,451	29,696.87	192.15	0.53	174	5.86	3.08				
<b>Unmatched Analysis (Site-adjusted only)</b>												
Saxagliptin	65+	60,584	35,608.92	214.68	0.59	558	15.67	9.21	-7.77	-8.07	0.62 ( 0.57, 0.67)	<0.001
Second-Generation Sulfonylureas	65+	779,665	574,692.67	269.23	0.74	13,470	23.44	17.28				
<b>1:1 Matched Conditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	65+	60,311	17,410.71	105.44	0.29	298	17.12	4.94	-7.70	-2.22	0.69 ( 0.60, 0.80)	<0.001
Second-Generation Sulfonylureas	65+	60,311	17,410.71	105.44	0.29	432	24.81	7.16				
<b>1:1 Matched Unconditional Predefined Analysis; Caliper= 0.01</b>												
Saxagliptin	65+	60,311	35,451.89	214.70	0.59	558	15.74	9.25	-4.34	-6.68	0.74 ( 0.67, 0.83)	<0.001
Second-Generation Sulfonylureas	65+	60,311	47,851.37	289.79	0.79	961	20.08	15.93				

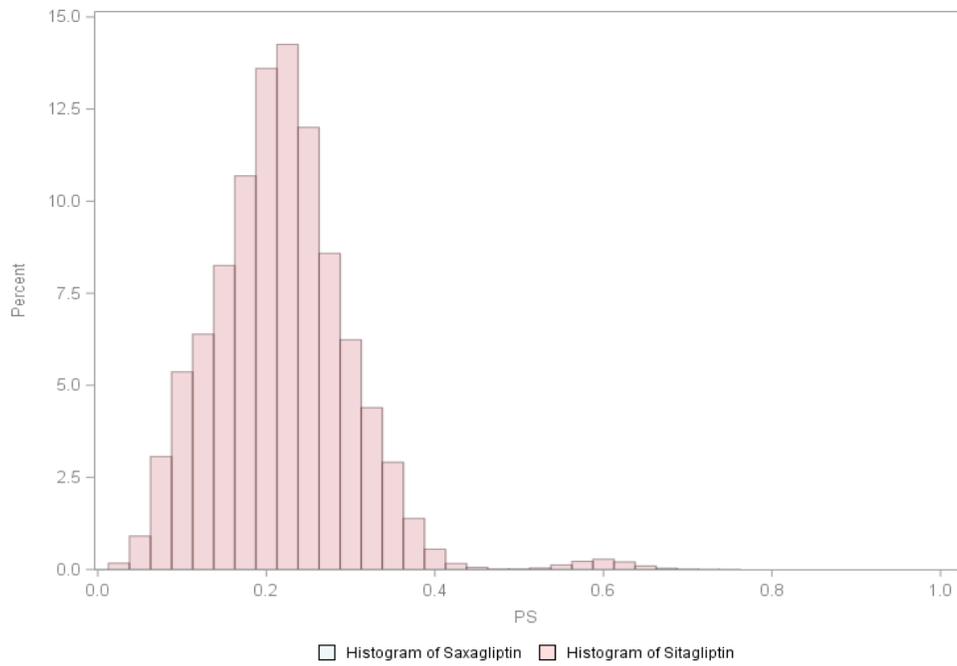
**Figure 1a. Propensity Score Distributions for New Users of Saxagliptin and Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015 (Updated), Unmatched, Aggregated**

---

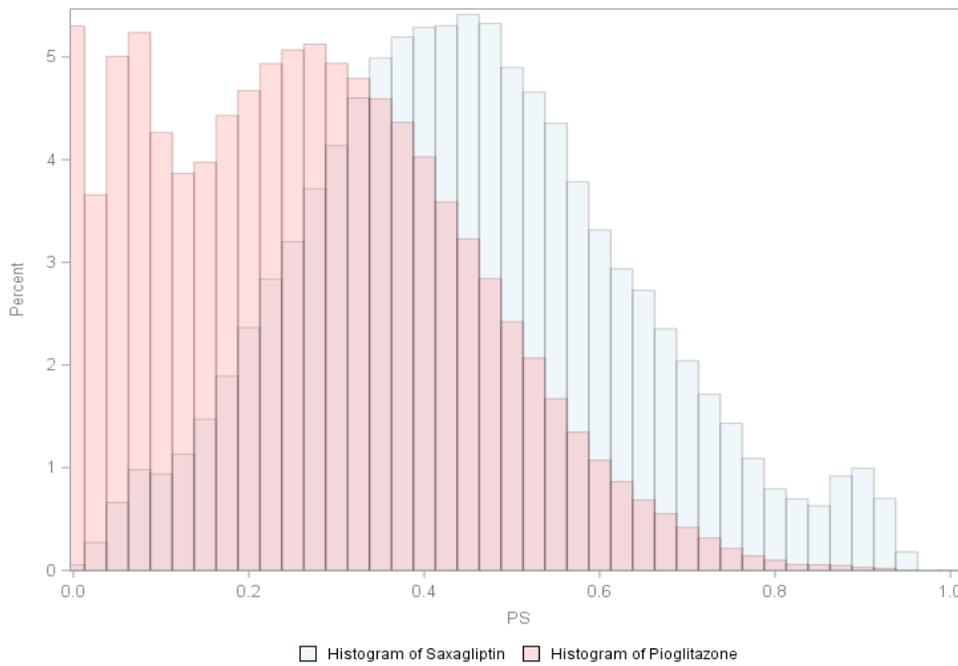


**Figure 1b. Propensity Score Distributions for New Users of Saxagliptin and Sitagliptin with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015 (Updated), Matched, Aggregated**

---

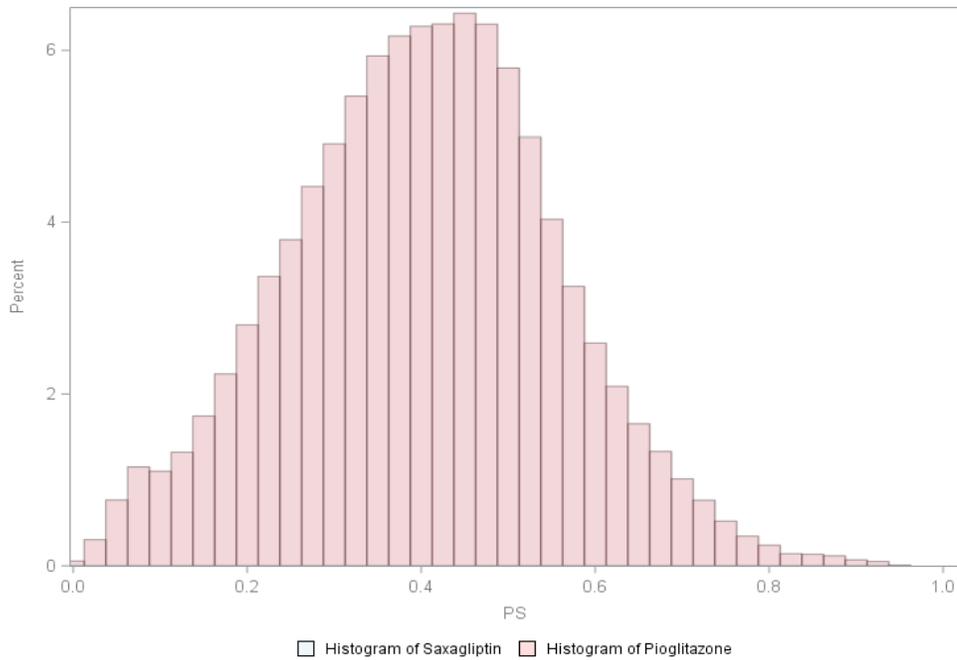


**Figure 2a. Propensity Score Distributions for New Users of Saxagliptin and Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015 (Updated), Unmatched, Aggregated**



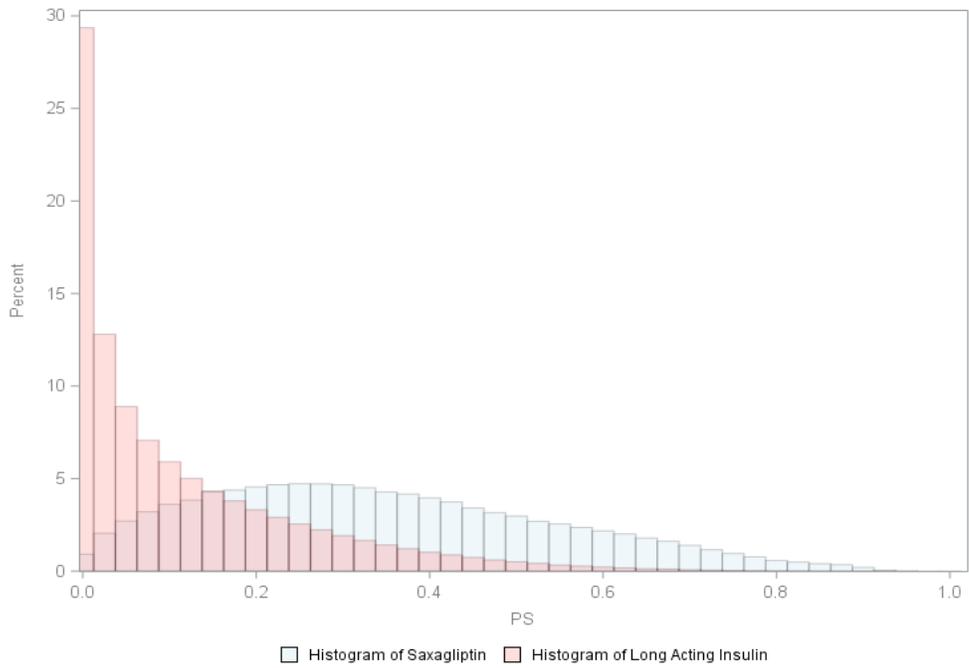
**Figure 2b. Propensity Score Distributions for New Users of Saxagliptin and Pioglitazone with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015 (Updated), Matched, Aggregated**

---



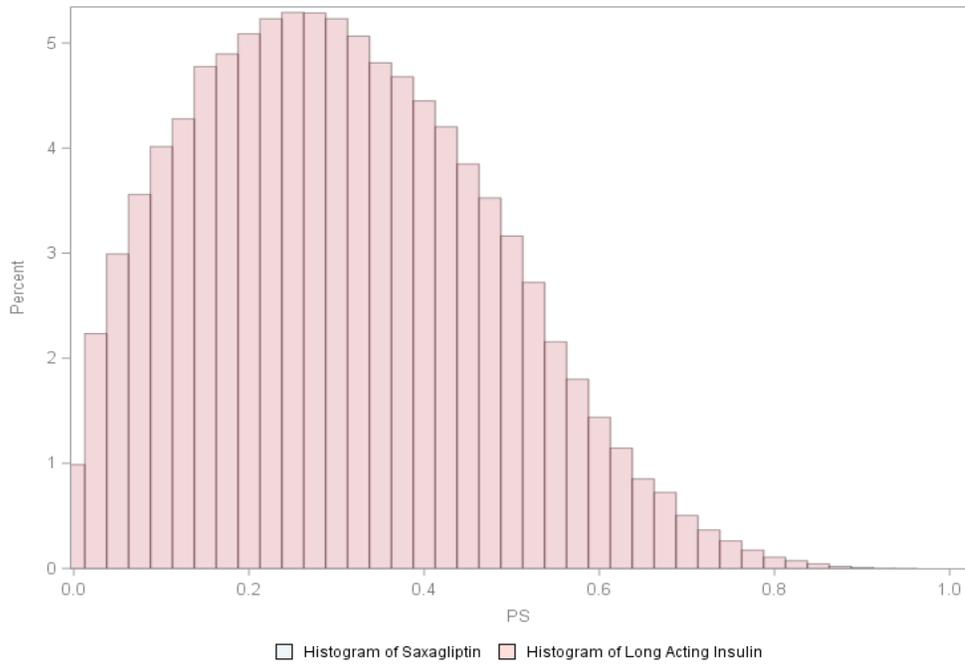
**Figure 3a. Propensity Score Distributions for New Users of Saxagliptin and Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015 (Updated), Unmatched, Aggregated**

---

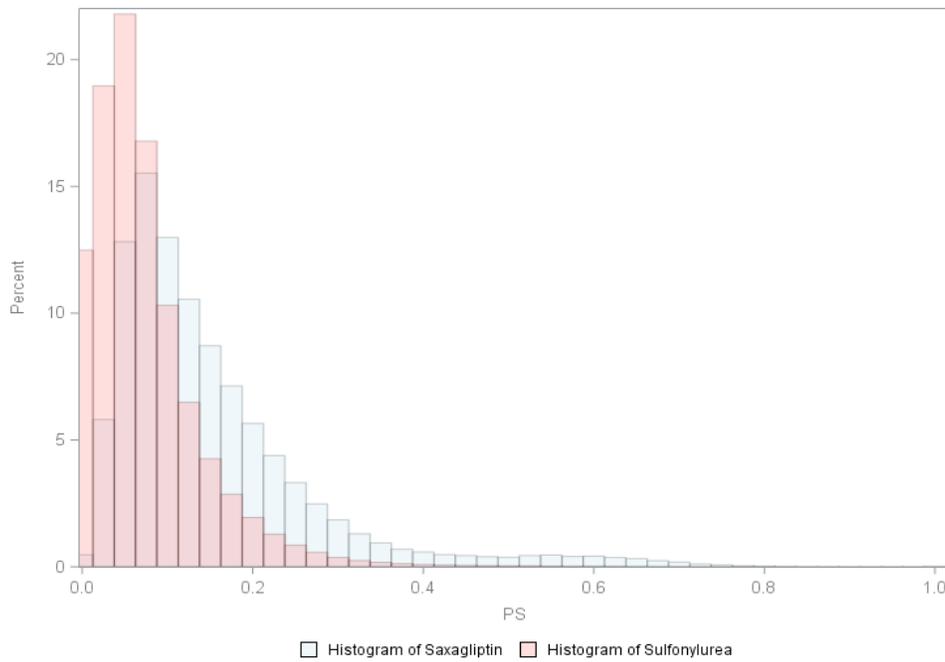


**Figure 3b. Propensity Score Distributions for New Users of Saxagliptin and Long-Acting Insulins with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015 (Updated), Matched, Aggregated**

---



**Figure 4a. Propensity Score Distributions for New Users of Saxagliptin and Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015 (Updated), Unmatched, Aggregated**



**Figure 4b. Propensity Score Distributions for New Users of Saxagliptin and Sulfonylureas with Hospitalized Heart Failure in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015 (Updated), Matched, Aggregated**

---

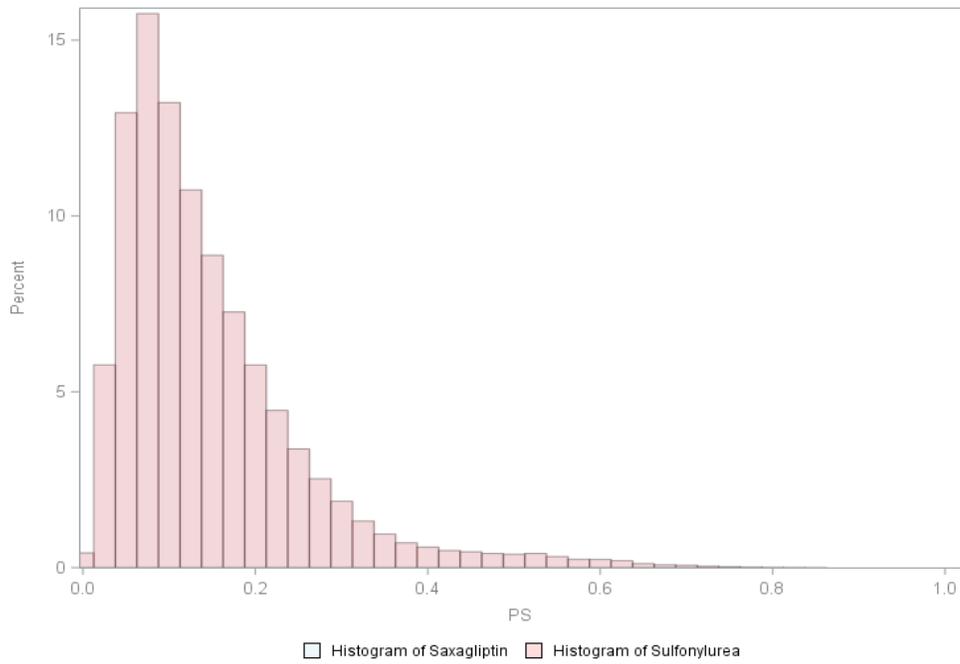
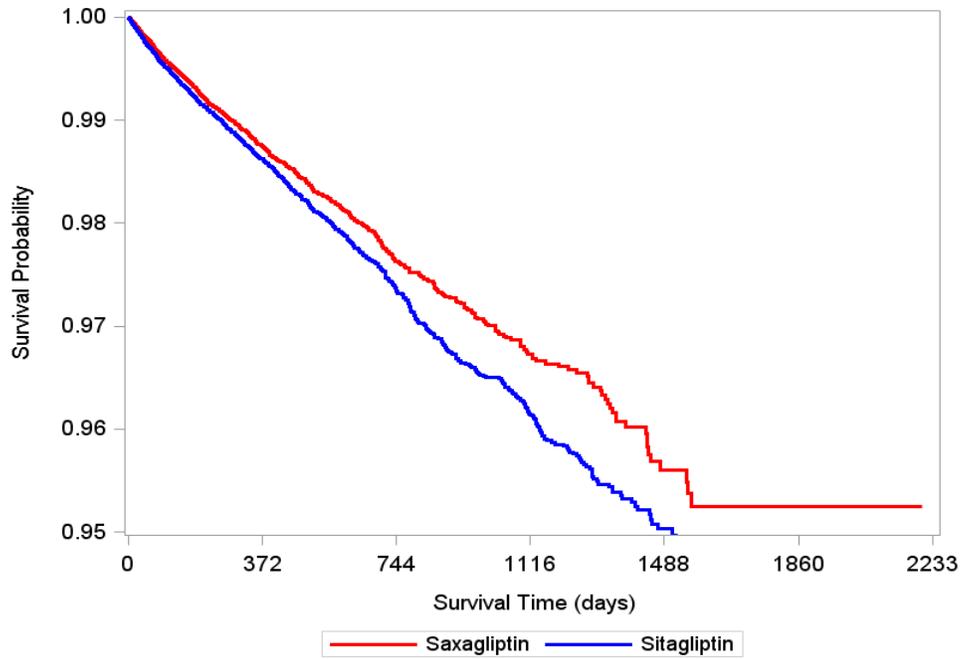
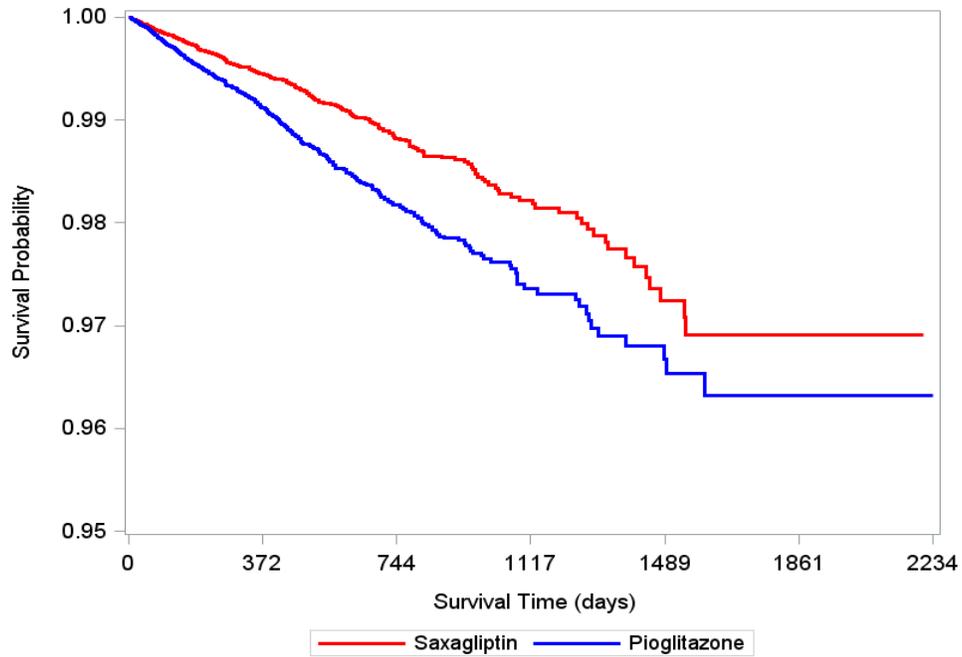


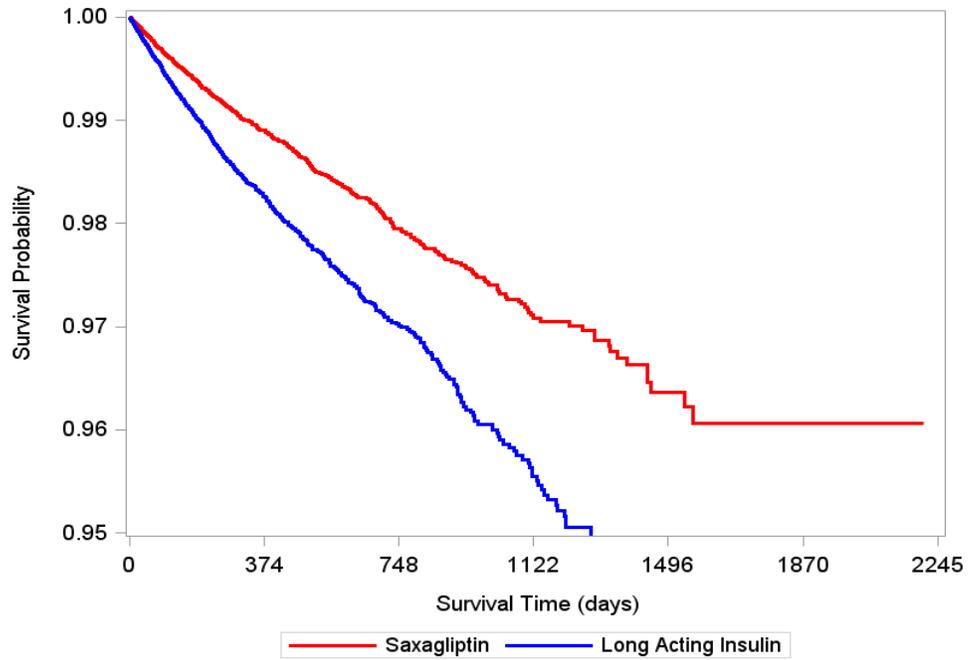
Figure 5. Kaplan Meier Survival Curves for Hospitalized Heart Failure Among New Users of Saxagliptin vs New Users of Sitagliptin in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015 (Updated), Unconditional Matched Cohort



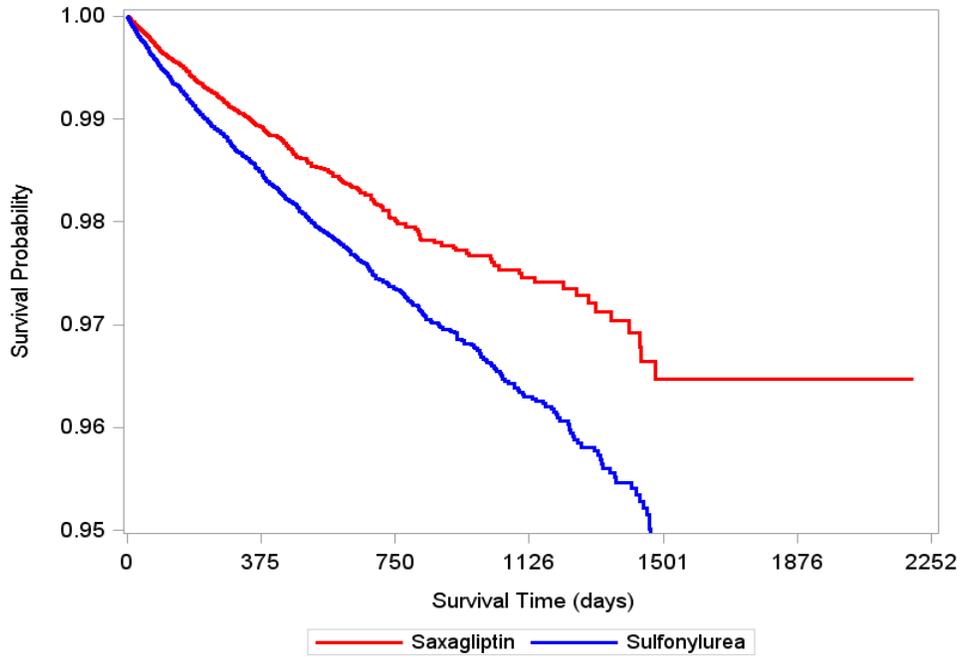
**Figure 6. Kaplan Meier Survival Curves for Hospitalized Heart Failure Among New Users of Saxagliptin vs New Users of Pioglitazone in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015 (Updated), Unconditional Matched Cohort**



**Figure 7. Kaplan Meier Survival Curves for Hospitalized Heart Failure Among New Users of Saxagliptin vs New Users of Long-Acting Insulins in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015 (Updated), Unconditional Matched Cohort**



**Figure 8. Kaplan Meier Survival Curves for Hospitalized Heart Failure Among New Users of Saxagliptin vs New Users of Sulfonylureas in the Sentinel Distributed Database (SDD) between August 1, 2009 and September 30, 2015 (Updated), Unconditional Matched Cohort**



**Appendix A. Dates of Available Data for Each Data Partner (DP) as of Request End Date (September 30, 2015)**

DP ID	DP Start Date <sup>1</sup>	DP End Date <sup>1</sup>
DP01	01/01/2000	09/30/2015
DP02	01/01/2004	09/30/2015
DP03	01/01/2000	09/30/2015
DP04	01/01/2005	09/30/2015
DP05	01/01/2006	09/30/2015
DP06	01/01/2000	09/30/2015
DP07	06/01/2007	09/30/2015
DP08	01/01/2000	09/30/2015
DP09	01/01/2000	09/30/2015
DP10	01/01/2000	09/30/2015
DP11	01/01/2010	09/30/2015
DP12	01/01/2012	09/30/2015
DP13	01/01/2008	09/30/2015
DP14	01/01/2000	09/30/2015
DP15	01/01/2008	09/30/2015
DP16	01/01/2000	09/30/2015

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

**Appendix B. List of Generic and Brand Names of Medical Products Used to Define Exposure and Incidence Criteria in this Report**

<b>Generic Name</b>	<b>Brand Name</b>
<b>Saxagliptin</b>	
dapagliflozin propanediol/saxagliptin hcl	Qtern
saxagliptin hcl	Onglyza
saxagliptin hcl/metformin hcl	Kombiglyze XR
<b>Sitagliptin</b>	
ertugliflozin pidolate/sitagliptin phosphate	Steglujan
sitagliptin phosphate	Januvia
sitagliptin phosphate/metformin hcl	Janumet
sitagliptin phosphate/metformin hcl	Janumet XR
sitagliptin phosphate/simvastatin	Juvisync
<b>Long-Acting Insulins</b>	
insulin aspart protamine human/insulin aspart	Novolog Mix 70-30flexpen U-100
insulin aspart protamine human/insulin aspart	Novolog Mix 70-30 U-100 Insuln
insulin degludec	Tresiba Flextouch U-200
insulin degludec	Tresiba Flextouch U-100
insulin degludec/liraglutide	Xultophy 100/3.6
insulin detemir	Levemir Flextouch U-100 Insuln
insulin detemir	Levemir Flexpen
insulin detemir	Levemir U-100 Insulin
insulin glargine,human recombinant analog	Lantus U-100 Insulin
insulin glargine,human recombinant analog	Basaglar Kwikpen U-100 Insulin
insulin glargine,human recombinant analog	Toujeo Solostar U-300 Insulin
insulin glargine,human recombinant analog	Lantus Solostar U-100 Insulin
insulin glargine,human recombinant analog/lixisenatide	Soliqua 100/33
insulin lispro protamine and insulin lispro	Humalog Mix 50-50 Insuln U-100
insulin lispro protamine and insulin lispro	Humalog Mix 75-25(U-100)Insuln
insulin lispro protamine and insulin lispro	Humalog Mix 75-25 Kwikpen
insulin lispro protamine and insulin lispro	Humalog Mix 50-50 Kwikpen
insulin nph human isophane	Novolin N Penfill
insulin nph human isophane	Humulin N Pen
insulin nph human isophane	Humulin N NPH Insulin Kwikpen
insulin nph human isophane	Novolin N Innolet
insulin nph human isophane	Humulin N Nph U-100 Insulin
insulin nph human isophane	Novolin N Nph U-100 Insulin
insulin nph human isophane/insulin regular, human	Novolin 70/30 Penfill
insulin nph human isophane/insulin regular, human	Humulin 70/30 Insulin Pen
insulin nph human isophane/insulin regular, human	Humulin 70/30 U-100 Kwikpen
insulin nph human isophane/insulin regular, human	Novolin 70/30 Innolet Insulin
insulin nph human isophane/insulin regular, human	Humulin 70/30 U-100 Insulin
insulin nph human isophane/insulin regular, human	Humulin 50/50
insulin nph human isophane/insulin regular, human	Novolin 70/30 U-100 Insulin

**Appendix B. List of Generic and Brand Names of Medical Products Used to Define Exposure and Incidence Criteria in this Report**

<b>Generic Name</b>	<b>Brand Name</b>
<b>Pioglitazone</b>	
alogliptin benzoate/pioglitazone hcl	Alogliptin-Pioglitazone
alogliptin benzoate/pioglitazone hcl	Oseni
pioglitazone hcl	Pioglitazone
pioglitazone hcl	Actos
pioglitazone hcl/glimepiride	Pioglitazone-Glimepiride
pioglitazone hcl/glimepiride	Duetact
pioglitazone hcl/metformin hcl	Pioglitazone-Metformin
pioglitazone hcl/metformin hcl	Actoplus MET
pioglitazone hcl/metformin hcl	Actoplus Met Xr
<b>Second-Generation Sulfonylureas</b>	
glimepiride	Amaryl
glimepiride	Glimepiride
glipizide	Glucotrol
glipizide	Glipizide
glipizide	Glucotrol XL
glipizide/metformin hcl	Metaglip
glipizide/metformin hcl	Glipizide-Metformin
glyburide	Micronase
glyburide	Diabeta
glyburide	Glyburide
glyburide,micronized	Glynase
glyburide,micronized	Glyburide Micronized
glyburide/metformin hcl	Glucovance
glyburide/metformin hcl	Glyburide-Metformin
pioglitazone hcl/glimepiride	Pioglitazone-Glimepiride
pioglitazone hcl/glimepiride	Duetact
rosiglitazone maleate/glimepiride	Avandaryl

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

Code	Description	Code Type	Code Category
<b>Diabetes</b>			
250	Diabetes mellitus	ICD-9-CM	Diagnosis
250.0	Diabetes mellitus without mention of complication	ICD-9-CM	Diagnosis
250.00	Diabetes mellitus without mention of complication, type II or unspecified type, not stated as uncontrolled	ICD-9-CM	Diagnosis
250.01	Diabetes mellitus without mention of complication, type I [juvenile type], not stated as uncontrolled	ICD-9-CM	Diagnosis
250.02	Diabetes mellitus without mention of complication, type II or unspecified type, uncontrolled	ICD-9-CM	Diagnosis
250.03	Diabetes mellitus without mention of complication, type I [juvenile type], uncontrolled	ICD-9-CM	Diagnosis
250.1	Diabetes with ketoacidosis	ICD-9-CM	Diagnosis
250.10	Diabetes with ketoacidosis, type II or unspecified type, not stated as uncontrolled	ICD-9-CM	Diagnosis
250.11	Diabetes with ketoacidosis, type I [juvenile type], not stated as uncontrolled	ICD-9-CM	Diagnosis
250.12	Diabetes with ketoacidosis, type II or unspecified type, uncontrolled	ICD-9-CM	Diagnosis
250.13	Diabetes with ketoacidosis, type I [juvenile type], uncontrolled	ICD-9-CM	Diagnosis
250.2	Diabetes with hyperosmolarity	ICD-9-CM	Diagnosis
250.20	Diabetes with hyperosmolarity, type II or unspecified type, not stated as uncontrolled	ICD-9-CM	Diagnosis
250.21	Diabetes with hyperosmolarity, type I [juvenile type], not stated as uncontrolled	ICD-9-CM	Diagnosis
250.22	Diabetes with hyperosmolarity, type II or unspecified type, uncontrolled	ICD-9-CM	Diagnosis
250.23	Diabetes with hyperosmolarity, type I [juvenile type], uncontrolled	ICD-9-CM	Diagnosis
250.3	Diabetes with other coma	ICD-9-CM	Diagnosis
250.30	Diabetes with other coma, type II or unspecified type, not stated as uncontrolled	ICD-9-CM	Diagnosis
250.31	Diabetes with other coma, type I [juvenile type], not stated as uncontrolled	ICD-9-CM	Diagnosis
250.32	Diabetes with other coma, type II or unspecified type, uncontrolled	ICD-9-CM	Diagnosis
250.33	Diabetes with other coma, type I [juvenile type], uncontrolled	ICD-9-CM	Diagnosis
250.4	Diabetes with renal manifestations	ICD-9-CM	Diagnosis
250.40	Diabetes with renal manifestations, type II or unspecified type, not stated as uncontrolled	ICD-9-CM	Diagnosis
250.41	Diabetes with renal manifestations, type I [juvenile type], not stated as uncontrolled	ICD-9-CM	Diagnosis
250.42	Diabetes with renal manifestations, type II or unspecified type, uncontrolled	ICD-9-CM	Diagnosis
250.43	Diabetes with renal manifestations, type I [juvenile type], uncontrolled	ICD-9-CM	Diagnosis
250.5	Diabetes with ophthalmic manifestations	ICD-9-CM	Diagnosis
250.50	Diabetes with ophthalmic manifestations, type II or unspecified type, not stated as uncontrolled	ICD-9-CM	Diagnosis
250.51	Diabetes with ophthalmic manifestations, type I [juvenile type], not stated as uncontrolled	ICD-9-CM	Diagnosis
250.52	Diabetes with ophthalmic manifestations, type II or unspecified type, uncontrolled	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
250.53	Diabetes with ophthalmic manifestations, type I [juvenile type], uncontrolled	ICD-9-CM	Diagnosis
250.6	Diabetes with neurological manifestations	ICD-9-CM	Diagnosis
250.60	Diabetes with neurological manifestations, type II or unspecified type, not stated as uncontrolled	ICD-9-CM	Diagnosis
250.61	Diabetes with neurological manifestations, type I [juvenile type], not stated as uncontrolled	ICD-9-CM	Diagnosis
250.62	Diabetes with neurological manifestations, type II or unspecified type, uncontrolled	ICD-9-CM	Diagnosis
250.63	Diabetes with neurological manifestations, type I [juvenile type], uncontrolled	ICD-9-CM	Diagnosis
250.7	Diabetes with peripheral circulatory disorders	ICD-9-CM	Diagnosis
250.70	Diabetes with peripheral circulatory disorders, type II or unspecified type, not stated as uncontrolled	ICD-9-CM	Diagnosis
250.71	Diabetes with peripheral circulatory disorders, type I [juvenile type], not stated as uncontrolled	ICD-9-CM	Diagnosis
250.72	Diabetes with peripheral circulatory disorders, type II or unspecified type, uncontrolled	ICD-9-CM	Diagnosis
250.73	Diabetes with peripheral circulatory disorders, type I [juvenile type], uncontrolled	ICD-9-CM	Diagnosis
250.8	Diabetes with other specified manifestations	ICD-9-CM	Diagnosis
250.80	Diabetes with other specified manifestations, type II or unspecified type, not stated as uncontrolled	ICD-9-CM	Diagnosis
250.81	Diabetes with other specified manifestations, type I [juvenile type], not stated as uncontrolled	ICD-9-CM	Diagnosis
250.82	Diabetes with other specified manifestations, type II or unspecified type, uncontrolled	ICD-9-CM	Diagnosis
250.83	Diabetes with other specified manifestations, type I [juvenile type], uncontrolled	ICD-9-CM	Diagnosis
250.9	Diabetes with unspecified complication	ICD-9-CM	Diagnosis
250.90	Diabetes with unspecified complication, type II or unspecified type, not stated as uncontrolled	ICD-9-CM	Diagnosis
250.91	Diabetes with unspecified complication, type I [juvenile type], not stated as uncontrolled	ICD-9-CM	Diagnosis
250.92	Diabetes with unspecified complication, type II or unspecified type, uncontrolled	ICD-9-CM	Diagnosis
250.93	Diabetes with unspecified complication, type I [juvenile type], uncontrolled	ICD-9-CM	Diagnosis
<b>Congestive Heart Failure</b>			
402.01	Malignant hypertensive heart disease with heart failure	ICD-9-CM	Diagnosis
402.11	Benign hypertensive heart disease with heart failure	ICD-9-CM	Diagnosis
402.91	Hypertensive heart disease, unspecified, with heart failure	ICD-9-CM	Diagnosis
404.01	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
404.03	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage V or end-stage renal disease	ICD-9-CM	Diagnosis
404.11	Hypertensive heart and chronic kidney disease, benign, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.13	Hypertensive heart and chronic kidney disease, benign, with heart failure and chronic kidney disease stage V or end-stage renal disease	ICD-9-CM	Diagnosis
404.91	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.93	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and chronic kidney disease stage V or end-stage renal disease	ICD-9-CM	Diagnosis
428	Heart failure	ICD-9-CM	Diagnosis
428.0	Congestive heart failure, unspecified	ICD-9-CM	Diagnosis
428.1	Left heart failure	ICD-9-CM	Diagnosis
428.2	Systolic heart failure	ICD-9-CM	Diagnosis
428.20	Unspecified systolic heart failure	ICD-9-CM	Diagnosis
428.21	Acute systolic heart failure	ICD-9-CM	Diagnosis
428.22	Chronic systolic heart failure	ICD-9-CM	Diagnosis
428.23	Acute on chronic systolic heart failure	ICD-9-CM	Diagnosis
428.3	Diastolic heart failure	ICD-9-CM	Diagnosis
428.30	Unspecified diastolic heart failure	ICD-9-CM	Diagnosis
428.31	Acute diastolic heart failure	ICD-9-CM	Diagnosis
428.32	Chronic diastolic heart failure	ICD-9-CM	Diagnosis
428.33	Acute on chronic diastolic heart failure	ICD-9-CM	Diagnosis
428.4	Combined systolic and diastolic heart failure	ICD-9-CM	Diagnosis
428.40	Unspecified combined systolic and diastolic heart failure	ICD-9-CM	Diagnosis
428.41	Acute combined systolic and diastolic heart failure	ICD-9-CM	Diagnosis
428.42	Chronic combined systolic and diastolic heart failure	ICD-9-CM	Diagnosis
428.43	Acute on chronic combined systolic and diastolic heart failure	ICD-9-CM	Diagnosis
428.9	Unspecified heart failure	ICD-9-CM	Diagnosis
<b>End of Pregnancy</b>			
630	Hydatidiform mole	ICD-9-CM	Diagnosis
631	Other abnormal product of conception	ICD-9-CM	Diagnosis
631.0	Inappropriate change in quantitative human chorionic gonadotropin (hCG) in early pregnancy	ICD-9-CM	Diagnosis
631.8	Other abnormal products of conception	ICD-9-CM	Diagnosis
632	Missed abortion	ICD-9-CM	Diagnosis
633	Ectopic pregnancy	ICD-9-CM	Diagnosis
633.0	Abdominal pregnancy	ICD-9-CM	Diagnosis
633.00	Abdominal pregnancy without intrauterine pregnancy	ICD-9-CM	Diagnosis
633.01	Abdominal pregnancy with intrauterine pregnancy	ICD-9-CM	Diagnosis
633.1	Tubal pregnancy	ICD-9-CM	Diagnosis
633.10	Tubal pregnancy without intrauterine pregnancy	ICD-9-CM	Diagnosis
633.11	Tubal pregnancy with intrauterine pregnancy	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
633.2	Ovarian pregnancy	ICD-9-CM	Diagnosis
633.20	Ovarian pregnancy without intrauterine pregnancy	ICD-9-CM	Diagnosis
633.21	Ovarian pregnancy with intrauterine pregnancy	ICD-9-CM	Diagnosis
633.8	Other ectopic pregnancy	ICD-9-CM	Diagnosis
633.80	Other ectopic pregnancy without intrauterine pregnancy	ICD-9-CM	Diagnosis
633.81	Other ectopic pregnancy with intrauterine pregnancy	ICD-9-CM	Diagnosis
633.9	Unspecified ectopic pregnancy	ICD-9-CM	Diagnosis
633.90	Unspecified ectopic pregnancy without intrauterine pregnancy	ICD-9-CM	Diagnosis
633.91	Unspecified ectopic pregnancy with intrauterine pregnancy	ICD-9-CM	Diagnosis
634	Spontaneous abortion	ICD-9-CM	Diagnosis
634.0	Spontaneous abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
634.00	Unspecified spontaneous abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
634.01	Incomplete spontaneous abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
634.02	Complete spontaneous abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
634.1	Spontaneous abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
634.10	Unspecified spontaneous abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
634.11	Incomplete spontaneous abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
634.12	Complete spontaneous abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
634.2	Spontaneous abortion complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
634.20	Unspecified spontaneous abortion complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
634.21	Incomplete spontaneous abortion complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
634.22	Complete spontaneous abortion complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
634.3	Spontaneous abortion complicated by renal failure	ICD-9-CM	Diagnosis
634.30	Unspecified spontaneous abortion complicated by renal failure	ICD-9-CM	Diagnosis
634.31	Incomplete spontaneous abortion complicated by renal failure	ICD-9-CM	Diagnosis
634.32	Complete spontaneous abortion complicated by renal failure	ICD-9-CM	Diagnosis
634.4	Spontaneous abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
634.40	Unspecified spontaneous abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
634.41	Incomplete spontaneous abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
634.42	Complete spontaneous abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
634.5	Spontaneous abortion complicated by shock	ICD-9-CM	Diagnosis
634.50	Unspecified spontaneous abortion complicated by shock	ICD-9-CM	Diagnosis
634.51	Incomplete spontaneous abortion complicated by shock	ICD-9-CM	Diagnosis
634.52	Complete spontaneous abortion complicated by shock	ICD-9-CM	Diagnosis
634.6	Spontaneous abortion complicated by embolism	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
634.60	Unspecified spontaneous abortion complicated by embolism	ICD-9-CM	Diagnosis
634.61	Incomplete spontaneous abortion complicated by embolism	ICD-9-CM	Diagnosis
634.62	Complete spontaneous abortion complicated by embolism	ICD-9-CM	Diagnosis
634.7	Spontaneous abortion with other specified complications	ICD-9-CM	Diagnosis
634.70	Unspecified spontaneous abortion with other specified complications	ICD-9-CM	Diagnosis
634.71	Incomplete spontaneous abortion with other specified complications	ICD-9-CM	Diagnosis
634.72	Complete spontaneous abortion with other specified complications	ICD-9-CM	Diagnosis
634.8	Spontaneous abortion with unspecified complication	ICD-9-CM	Diagnosis
634.80	Unspecified spontaneous abortion with unspecified complication	ICD-9-CM	Diagnosis
634.81	Incomplete spontaneous abortion with unspecified complication	ICD-9-CM	Diagnosis
634.82	Complete spontaneous abortion with unspecified complication	ICD-9-CM	Diagnosis
634.9	Spontaneous abortion without mention of complication	ICD-9-CM	Diagnosis
634.90	Unspecified spontaneous abortion without mention of complication	ICD-9-CM	Diagnosis
634.91	Incomplete spontaneous abortion without mention of complication	ICD-9-CM	Diagnosis
634.92	Complete spontaneous abortion without mention of complication	ICD-9-CM	Diagnosis
635	Legally induced abortion	ICD-9-CM	Diagnosis
635.0	Legally induced abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
635.00	Unspecified legally induced abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
635.01	Incomplete legally induced abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
635.02	Complete legally induced abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
635.1	Legally induced abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
635.10	Unspecified legally induced abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
635.11	Incomplete legally induced abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
635.12	Complete legally induced abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
635.2	Legally induced abortion complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
635.20	Unspecified legally induced abortion complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
635.21	Legally induced abortion complicated by damage to pelvic organs or tissues, incomplete	ICD-9-CM	Diagnosis
635.22	Complete legally induced abortion complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
635.3	Legally induced abortion complicated by renal failure	ICD-9-CM	Diagnosis
635.30	Unspecified legally induced abortion complicated by renal failure	ICD-9-CM	Diagnosis
635.31	Incomplete legally induced abortion complicated by renal failure	ICD-9-CM	Diagnosis
635.32	Complete legally induced abortion complicated by renal failure	ICD-9-CM	Diagnosis
635.4	Legally induced abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
635.40	Unspecified legally induced abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
635.41	Incomplete legally induced abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
635.42	Complete legally induced abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
635.5	Legally induced abortion complicated by shock	ICD-9-CM	Diagnosis
635.50	Unspecified legally induced abortion complicated by shock	ICD-9-CM	Diagnosis
635.51	Legally induced abortion, complicated by shock, incomplete	ICD-9-CM	Diagnosis
635.52	Complete legally induced abortion complicated by shock	ICD-9-CM	Diagnosis
635.6	Legally induced abortion complicated by embolism	ICD-9-CM	Diagnosis
635.60	Unspecified legally induced abortion complicated by embolism	ICD-9-CM	Diagnosis
635.61	Incomplete legally induced abortion complicated by embolism	ICD-9-CM	Diagnosis
635.62	Complete legally induced abortion complicated by embolism	ICD-9-CM	Diagnosis
635.7	Legally induced abortion with other specified complications	ICD-9-CM	Diagnosis
635.70	Unspecified legally induced abortion with other specified complications	ICD-9-CM	Diagnosis
635.71	Incomplete legally induced abortion with other specified complications	ICD-9-CM	Diagnosis
635.72	Complete legally induced abortion with other specified complications	ICD-9-CM	Diagnosis
635.8	Legally induced abortion with unspecified complication	ICD-9-CM	Diagnosis
635.80	Unspecified legally induced abortion with unspecified complication	ICD-9-CM	Diagnosis
635.81	Incomplete legally induced abortion with unspecified complication	ICD-9-CM	Diagnosis
635.82	Complete legally induced abortion with unspecified complication	ICD-9-CM	Diagnosis
635.9	Legally induced abortion without mention of complication	ICD-9-CM	Diagnosis
635.90	Unspecified legally induced abortion without mention of complication	ICD-9-CM	Diagnosis
635.91	Incomplete legally induced abortion without mention of complication	ICD-9-CM	Diagnosis
635.92	Complete legally induced abortion without mention of complication	ICD-9-CM	Diagnosis
636	Illegally induced abortion	ICD-9-CM	Diagnosis
636.0	Illegally induced abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
636.00	Unspecified illegally induced abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
636.01	Incomplete illegally induced abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
636.02	Complete illegally induced abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
636.1	Illegally induced abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
636.10	Unspecified illegally induced abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
636.11	Incomplete illegally induced abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
636.12	Complete illegally induced abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
636.2	Illegally induced abortion complicated by damage to pelvic organs or tissue	ICD-9-CM	Diagnosis
636.20	Unspecified illegally induced abortion complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
636.21	Incomplete illegally induced abortion complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
636.22	Complete illegally induced abortion complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
636.3	Illegally induced abortion complicated by renal failure	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
636.30	Unspecified illegally induced abortion complicated by renal failure	ICD-9-CM	Diagnosis
636.31	Incomplete illegally induced abortion complicated by renal failure	ICD-9-CM	Diagnosis
636.32	Complete illegally induced abortion complicated by renal failure	ICD-9-CM	Diagnosis
636.4	Illegally induced abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
636.40	Unspecified illegally induced abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
636.41	Incomplete illegally induced abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
636.42	Complete illegally induced abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
636.5	Illegally induced abortion complicated by shock	ICD-9-CM	Diagnosis
636.50	Unspecified illegally induced abortion complicated by shock	ICD-9-CM	Diagnosis
636.51	Incomplete illegally induced abortion complicated by shock	ICD-9-CM	Diagnosis
636.52	Complete illegally induced abortion complicated by shock	ICD-9-CM	Diagnosis
636.6	Illegally induced abortion complicated by embolism	ICD-9-CM	Diagnosis
636.60	Unspecified illegally induced abortion complicated by embolism	ICD-9-CM	Diagnosis
636.61	Incomplete illegally induced abortion complicated by embolism	ICD-9-CM	Diagnosis
636.62	Complete illegally induced abortion complicated by embolism	ICD-9-CM	Diagnosis
636.7	Illegally induced abortion with other specified complications	ICD-9-CM	Diagnosis
636.70	Unspecified illegally induced abortion with other specified complications	ICD-9-CM	Diagnosis
636.71	Incomplete illegally induced abortion with other specified complications	ICD-9-CM	Diagnosis
636.72	Complete illegally induced abortion with other specified complications	ICD-9-CM	Diagnosis
636.8	Illegally induced abortion with unspecified complication	ICD-9-CM	Diagnosis
636.80	Unspecified illegally induced abortion with unspecified complication	ICD-9-CM	Diagnosis
636.81	Incomplete illegally induced abortion with unspecified complication	ICD-9-CM	Diagnosis
636.82	Complete illegally induced abortion with unspecified complication	ICD-9-CM	Diagnosis
636.9	Illegally induced abortion without mention of complication	ICD-9-CM	Diagnosis
636.90	Unspecified illegally induced abortion without mention of complication	ICD-9-CM	Diagnosis
636.91	Incomplete illegally induced abortion without mention of complication	ICD-9-CM	Diagnosis
636.92	Complete illegally induced abortion without mention of complication	ICD-9-CM	Diagnosis
637	Abortion, unspecified as to legality	ICD-9-CM	Diagnosis
637.0	Abortion, unspecified as to legality, complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
637.00	Abortion, unspecified as to completion or legality, complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
637.01	Abortion, unspecified as to legality, incomplete, complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
637.02	Abortion, unspecified as to legality, complete, complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
637.1	Abortion, unspecified as to legality, complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
637.10	Abortion, unspecified as to completion or legality, complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
637.11	Abortion, unspecified as to legality, incomplete, complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
637.12	Abortion, unspecified as to legality, complete, complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
637.2	Abortion, unspecified as to legality, complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
637.20	Abortion, unspecified as to completion or legality, complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
637.21	Abortion, unspecified as to legality, incomplete, complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
637.22	Abortion, unspecified as to legality, complete, complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
637.3	Abortion, unspecified as to legality, complicated by renal failure	ICD-9-CM	Diagnosis
637.30	Abortion, unspecified as to completion or legality, complicated by renal failure	ICD-9-CM	Diagnosis
637.31	Abortion, unspecified as to legality, incomplete, complicated by renal failure	ICD-9-CM	Diagnosis
637.32	Abortion, unspecified as to legality, complete, complicated by renal failure	ICD-9-CM	Diagnosis
637.4	Abortion, unspecified as to legality, complicated by metabolic disorder	ICD-9-CM	Diagnosis
637.40	Abortion, unspecified as to completion or legality, complicated by metabolic disorder	ICD-9-CM	Diagnosis
637.41	Abortion, unspecified as to legality, incomplete, complicated by metabolic disorder	ICD-9-CM	Diagnosis
637.42	Abortion, unspecified as to legality, complete, complicated by metabolic disorder	ICD-9-CM	Diagnosis
637.5	Abortion, unspecified as to legality, complicated by shock	ICD-9-CM	Diagnosis
637.50	Abortion, unspecified as to completion or legality, complicated by shock	ICD-9-CM	Diagnosis
637.51	Abortion, unspecified as to legality, incomplete, complicated by shock	ICD-9-CM	Diagnosis
637.52	Abortion, unspecified as to legality, complete, complicated by shock	ICD-9-CM	Diagnosis
637.6	Abortion, unspecified as to legality, complicated by embolism	ICD-9-CM	Diagnosis
637.60	Abortion, unspecified as to completion or legality, complicated by embolism	ICD-9-CM	Diagnosis
637.61	Abortion, unspecified as to legality, incomplete, complicated by embolism	ICD-9-CM	Diagnosis
637.62	Abortion, unspecified as to legality, complete, complicated by embolism	ICD-9-CM	Diagnosis
637.7	Abortion, unspecified as to legality, with other specified complications	ICD-9-CM	Diagnosis
637.70	Abortion, unspecified as to completion or legality, with other specified complications	ICD-9-CM	Diagnosis
637.71	Abortion, unspecified as to legality, incomplete, with other specified complications	ICD-9-CM	Diagnosis
637.72	Abortion, unspecified as to legality, complete, with other specified complications	ICD-9-CM	Diagnosis
637.8	Abortion, unspecified as to legality, with unspecified complication	ICD-9-CM	Diagnosis
637.80	Abortion, unspecified as to completion or legality, with unspecified complication	ICD-9-CM	Diagnosis
637.81	Abortion, unspecified as to legality, incomplete, with unspecified complication	ICD-9-CM	Diagnosis
637.82	Abortion, unspecified as to legality, complete, with unspecified complication	ICD-9-CM	Diagnosis
637.9	Abortion, unspecified as to legality, without mention of complication	ICD-9-CM	Diagnosis
637.90	Unspecified type of abortion, unspecified as to completion or legality, without mention of complication	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
637.91	Abortion, unspecified as to legality, incomplete, without mention of complication	ICD-9-CM	Diagnosis
637.92	Abortion, unspecified as to legality, complete, without mention of complication	ICD-9-CM	Diagnosis
638	Failed attempted abortion	ICD-9-CM	Diagnosis
638.0	Failed attempted abortion complicated by genital tract and pelvic infection	ICD-9-CM	Diagnosis
638.1	Failed attempted abortion complicated by delayed or excessive hemorrhage	ICD-9-CM	Diagnosis
638.2	Failed attempted abortion complicated by damage to pelvic organs or tissues	ICD-9-CM	Diagnosis
638.3	Failed attempted abortion complicated by renal failure	ICD-9-CM	Diagnosis
638.4	Failed attempted abortion complicated by metabolic disorder	ICD-9-CM	Diagnosis
638.5	Failed attempted abortion complicated by shock	ICD-9-CM	Diagnosis
638.6	Failed attempted abortion complicated by embolism	ICD-9-CM	Diagnosis
638.7	Failed attempted abortion with other specified complication	ICD-9-CM	Diagnosis
638.8	Failed attempted abortion with unspecified complication	ICD-9-CM	Diagnosis
638.9	Failed attempted abortion without mention of complication	ICD-9-CM	Diagnosis
639	Complications following abortion or ectopic and molar pregnancies	ICD-9-CM	Diagnosis
639.0	Genital tract and pelvic infection following abortion or ectopic and molar pregnancies	ICD-9-CM	Diagnosis
639.1	Delayed or excessive hemorrhage following abortion or ectopic and molar pregnancies	ICD-9-CM	Diagnosis
639.2	Damage to pelvic organs and tissues following abortion or ectopic and molar pregnancies	ICD-9-CM	Diagnosis
639.3	Complications following abortion and ectopic and molar pregnancies, kidney failure	ICD-9-CM	Diagnosis
639.4	Metabolic disorders following abortion or ectopic and molar pregnancies	ICD-9-CM	Diagnosis
639.5	Shock following abortion or ectopic and molar pregnancies	ICD-9-CM	Diagnosis
639.6	Embolism following abortion or ectopic and molar pregnancies	ICD-9-CM	Diagnosis
639.8	Other specified complication following abortion or ectopic and molar pregnancies	ICD-9-CM	Diagnosis
639.9	Unspecified complication following abortion or ectopic and molar pregnancies	ICD-9-CM	Diagnosis
640	Hemorrhage in early pregnancy	ICD-9-CM	Diagnosis
640.0	Threatened abortion	ICD-9-CM	Diagnosis
640.00	Threatened abortion, unspecified as to episode of care	ICD-9-CM	Diagnosis
640.01	Threatened abortion, delivered	ICD-9-CM	Diagnosis
640.03	Threatened abortion, antepartum	ICD-9-CM	Diagnosis
640.8	Other specified hemorrhage in early pregnancy	ICD-9-CM	Diagnosis
640.80	Other specified hemorrhage in early pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
640.81	Other specified hemorrhage in early pregnancy, delivered	ICD-9-CM	Diagnosis
640.83	Other specified hemorrhage in early pregnancy, antepartum	ICD-9-CM	Diagnosis
640.9	Unspecified hemorrhage in early pregnancy	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
640.90	Unspecified hemorrhage in early pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
640.91	Unspecified hemorrhage in early pregnancy, delivered	ICD-9-CM	Diagnosis
640.93	Unspecified hemorrhage in early pregnancy, antepartum	ICD-9-CM	Diagnosis
641	Antepartum hemorrhage, abruptio placentae, and placenta previa	ICD-9-CM	Diagnosis
641.0	Placenta previa without hemorrhage	ICD-9-CM	Diagnosis
641.00	Placenta previa without hemorrhage, unspecified as to episode of care	ICD-9-CM	Diagnosis
641.01	Placenta previa without hemorrhage, with delivery	ICD-9-CM	Diagnosis
641.03	Placenta previa without hemorrhage, antepartum	ICD-9-CM	Diagnosis
641.1	Hemorrhage from placenta previa	ICD-9-CM	Diagnosis
641.10	Hemorrhage from placenta previa, unspecified as to episode of care	ICD-9-CM	Diagnosis
641.11	Hemorrhage from placenta previa, with delivery	ICD-9-CM	Diagnosis
641.13	Hemorrhage from placenta previa, antepartum	ICD-9-CM	Diagnosis
641.2	Premature separation of placenta	ICD-9-CM	Diagnosis
641.20	Premature separation of placenta, unspecified as to episode of care	ICD-9-CM	Diagnosis
641.21	Premature separation of placenta, with delivery	ICD-9-CM	Diagnosis
641.23	Premature separation of placenta, antepartum	ICD-9-CM	Diagnosis
641.3	Antepartum hemorrhage associated with coagulation defects	ICD-9-CM	Diagnosis
641.30	Antepartum hemorrhage associated with coagulation defects, unspecified as to episode of care	ICD-9-CM	Diagnosis
641.31	Antepartum hemorrhage associated with coagulation defects, with delivery	ICD-9-CM	Diagnosis
641.33	Antepartum hemorrhage associated with coagulation defect, antepartum	ICD-9-CM	Diagnosis
641.8	Other antepartum hemorrhage	ICD-9-CM	Diagnosis
641.80	Other antepartum hemorrhage, unspecified as to episode of care	ICD-9-CM	Diagnosis
641.81	Other antepartum hemorrhage, with delivery	ICD-9-CM	Diagnosis
641.83	Other antepartum hemorrhage, antepartum	ICD-9-CM	Diagnosis
641.9	Unspecified antepartum hemorrhage	ICD-9-CM	Diagnosis
641.90	Unspecified antepartum hemorrhage, unspecified as to episode of care	ICD-9-CM	Diagnosis
641.91	Unspecified antepartum hemorrhage, with delivery	ICD-9-CM	Diagnosis
641.93	Unspecified antepartum hemorrhage, antepartum	ICD-9-CM	Diagnosis
642	Hypertension complicating pregnancy, childbirth, and the puerperium	ICD-9-CM	Diagnosis
642.0	Benign essential hypertension complicating pregnancy, childbirth, and the puerperium	ICD-9-CM	Diagnosis
642.00	Benign essential hypertension complicating pregnancy, childbirth, and the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
642.01	Benign essential hypertension with delivery	ICD-9-CM	Diagnosis
642.02	Benign essential hypertension, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
642.03	Benign essential hypertension antepartum	ICD-9-CM	Diagnosis
642.04	Benign essential hypertension, complicating pregnancy, childbirth, and the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
642.1	Hypertension secondary to renal disease, complicating pregnancy, childbirth, and the puerperium	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
642.10	Hypertension secondary to renal disease, complicating pregnancy, childbirth, and the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
642.11	Hypertension secondary to renal disease, with delivery	ICD-9-CM	Diagnosis
642.12	Hypertension secondary to renal disease, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
642.13	Hypertension secondary to renal disease, antepartum	ICD-9-CM	Diagnosis
642.14	Hypertension secondary to renal disease, complicating pregnancy, childbirth, and the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
642.2	Other pre-existing hypertension complicating pregnancy, childbirth, and the puerperium	ICD-9-CM	Diagnosis
642.20	Other pre-existing hypertension complicating pregnancy, childbirth, and the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
642.21	Other pre-existing hypertension, with delivery	ICD-9-CM	Diagnosis
642.22	Other pre-existing hypertension, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
642.23	Other pre-existing hypertension, antepartum	ICD-9-CM	Diagnosis
642.24	Other pre-existing hypertension complicating pregnancy, childbirth, and the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
642.3	Transient hypertension of pregnancy	ICD-9-CM	Diagnosis
642.30	Transient hypertension of pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
642.31	Transient hypertension of pregnancy, with delivery	ICD-9-CM	Diagnosis
642.32	Transient hypertension of pregnancy, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
642.33	Transient hypertension of pregnancy, antepartum	ICD-9-CM	Diagnosis
642.34	Transient hypertension of pregnancy, postpartum condition or complication	ICD-9-CM	Diagnosis
642.4	Mild or unspecified pre-eclampsia	ICD-9-CM	Diagnosis
642.40	Mild or unspecified pre-eclampsia, unspecified as to episode of care	ICD-9-CM	Diagnosis
642.41	Mild or unspecified pre-eclampsia, with delivery	ICD-9-CM	Diagnosis
642.42	Mild or unspecified pre-eclampsia, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
642.43	Mild or unspecified pre-eclampsia, antepartum	ICD-9-CM	Diagnosis
642.44	Mild or unspecified pre-eclampsia, postpartum condition or complication	ICD-9-CM	Diagnosis
642.5	Severe pre-eclampsia	ICD-9-CM	Diagnosis
642.50	Severe pre-eclampsia, unspecified as to episode of care	ICD-9-CM	Diagnosis
642.51	Severe pre-eclampsia, with delivery	ICD-9-CM	Diagnosis
642.52	Severe pre-eclampsia, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
642.53	Severe pre-eclampsia, antepartum	ICD-9-CM	Diagnosis
642.54	Severe pre-eclampsia, postpartum condition or complication	ICD-9-CM	Diagnosis
642.6	Eclampsia complicating pregnancy, childbirth or the puerperium	ICD-9-CM	Diagnosis
642.60	Eclampsia complicating pregnancy, childbirth or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
642.61	Eclampsia, with delivery	ICD-9-CM	Diagnosis
642.62	Eclampsia, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
642.63	Eclampsia, antepartum	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
642.64	Eclampsia, postpartum condition or complication	ICD-9-CM	Diagnosis
642.7	Pre-eclampsia or eclampsia superimposed on pre-existing hypertension	ICD-9-CM	Diagnosis
642.70	Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
642.71	Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, with delivery	ICD-9-CM	Diagnosis
642.72	Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
642.73	Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, antepartum	ICD-9-CM	Diagnosis
642.74	Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, postpartum condition or complication	ICD-9-CM	Diagnosis
642.9	Unspecified hypertension complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
642.90	Unspecified hypertension complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
642.91	Unspecified hypertension, with delivery	ICD-9-CM	Diagnosis
642.92	Unspecified hypertension, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
642.93	Unspecified hypertension antepartum	ICD-9-CM	Diagnosis
642.94	Unspecified hypertension complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
643	Excessive vomiting in pregnancy	ICD-9-CM	Diagnosis
643.0	Mild hyperemesis gravidarum	ICD-9-CM	Diagnosis
643.00	Mild hyperemesis gravidarum, unspecified as to episode of care	ICD-9-CM	Diagnosis
643.01	Mild hyperemesis gravidarum, delivered	ICD-9-CM	Diagnosis
643.03	Mild hyperemesis gravidarum, antepartum	ICD-9-CM	Diagnosis
643.1	Hyperemesis gravidarum with metabolic disturbance	ICD-9-CM	Diagnosis
643.10	Hyperemesis gravidarum with metabolic disturbance, unspecified as to episode of care	ICD-9-CM	Diagnosis
643.11	Hyperemesis gravidarum with metabolic disturbance, delivered	ICD-9-CM	Diagnosis
643.13	Hyperemesis gravidarum with metabolic disturbance, antepartum	ICD-9-CM	Diagnosis
643.2	Late vomiting of pregnancy	ICD-9-CM	Diagnosis
643.20	Late vomiting of pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
643.21	Late vomiting of pregnancy, delivered	ICD-9-CM	Diagnosis
643.23	Late vomiting of pregnancy, antepartum	ICD-9-CM	Diagnosis
643.8	Other vomiting complicating pregnancy	ICD-9-CM	Diagnosis
643.80	Other vomiting complicating pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
643.81	Other vomiting complicating pregnancy, delivered	ICD-9-CM	Diagnosis
643.83	Other vomiting complicating pregnancy, antepartum	ICD-9-CM	Diagnosis
643.9	Unspecified vomiting of pregnancy	ICD-9-CM	Diagnosis
643.90	Unspecified vomiting of pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
643.91	Unspecified vomiting of pregnancy, delivered	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
643.93	Unspecified vomiting of pregnancy, antepartum	ICD-9-CM	Diagnosis
644	Early or threatened labor	ICD-9-CM	Diagnosis
644.0	Threatened premature labor	ICD-9-CM	Diagnosis
644.00	Threatened premature labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
644.03	Threatened premature labor, antepartum	ICD-9-CM	Diagnosis
644.1	Other threatened labor	ICD-9-CM	Diagnosis
644.10	Other threatened labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
644.13	Other threatened labor, antepartum	ICD-9-CM	Diagnosis
644.2	Early onset of delivery	ICD-9-CM	Diagnosis
644.20	Early onset of delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
644.21	Early onset of delivery, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
645	Late pregnancy	ICD-9-CM	Diagnosis
645.0	Prolonged pregnancy	ICD-9-CM	Diagnosis
645.00	Prolonged pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
645.01	Prolonged pregnancy, with delivery	ICD-9-CM	Diagnosis
645.03	Prolonged pregnancy, antepartum	ICD-9-CM	Diagnosis
645.1	Post term pregnancy	ICD-9-CM	Diagnosis
645.10	Post term pregnancy, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
645.11	Post term pregnancy, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
645.13	Post term pregnancy, antepartum condition or complication	ICD-9-CM	Diagnosis
645.2	Prolonged pregnancy	ICD-9-CM	Diagnosis
645.20	Prolonged pregnancy, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
645.21	Prolonged pregnancy, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
645.23	Prolonged pregnancy, antepartum condition or complication	ICD-9-CM	Diagnosis
646	Other complications of pregnancy, not elsewhere classified	ICD-9-CM	Diagnosis
646.0	Papyraceous fetus	ICD-9-CM	Diagnosis
646.00	Papyraceous fetus, unspecified as to episode of care	ICD-9-CM	Diagnosis
646.01	Papyraceous fetus, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
646.03	Papyraceous fetus, antepartum	ICD-9-CM	Diagnosis
646.1	Edema or excessive weight gain in pregnancy, without mention of hypertension	ICD-9-CM	Diagnosis
646.10	Edema or excessive weight gain in pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
646.11	Edema or excessive weight gain in pregnancy, with delivery, with or without mention of antepartum complication	ICD-9-CM	Diagnosis
646.12	Edema or excessive weight gain in pregnancy, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
646.13	Edema or excessive weight gain, antepartum	ICD-9-CM	Diagnosis
646.14	Edema or excessive weight gain in pregnancy, without mention of hypertension, postpartum condition or complication	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
646.2	Unspecified renal disease in pregnancy, without mention of hypertension	ICD-9-CM	Diagnosis
646.20	Unspecified renal disease in pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
646.21	Unspecified renal disease in pregnancy, with delivery	ICD-9-CM	Diagnosis
646.22	Unspecified renal disease in pregnancy, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
646.23	Unspecified antepartum renal disease	ICD-9-CM	Diagnosis
646.24	Unspecified renal disease in pregnancy, without mention of hypertension, postpartum condition or complication	ICD-9-CM	Diagnosis
646.3	Pregnancy complication, recurrent pregnancy loss	ICD-9-CM	Diagnosis
646.30	Pregnancy complication, recurrent pregnancy loss, unspecified as to episode of care	ICD-9-CM	Diagnosis
646.31	Pregnancy complication, recurrent pregnancy loss, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
646.33	Pregnancy complication, recurrent pregnancy loss, antepartum condition or complication	ICD-9-CM	Diagnosis
646.4	Peripheral neuritis in pregnancy	ICD-9-CM	Diagnosis
646.40	Peripheral neuritis in pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
646.41	Peripheral neuritis in pregnancy, with delivery	ICD-9-CM	Diagnosis
646.42	Peripheral neuritis in pregnancy, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
646.43	Peripheral neuritis antepartum	ICD-9-CM	Diagnosis
646.44	Peripheral neuritis in pregnancy, postpartum condition or complication	ICD-9-CM	Diagnosis
646.5	Asymptomatic bacteriuria in pregnancy	ICD-9-CM	Diagnosis
646.50	Asymptomatic bacteriuria in pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
646.51	Asymptomatic bacteriuria in pregnancy, with delivery	ICD-9-CM	Diagnosis
646.52	Asymptomatic bacteriuria in pregnancy, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
646.53	Asymptomatic bacteriuria antepartum	ICD-9-CM	Diagnosis
646.54	Asymptomatic bacteriuria in pregnancy, postpartum condition or complication	ICD-9-CM	Diagnosis
646.6	Infections of genitourinary tract in pregnancy	ICD-9-CM	Diagnosis
646.60	Infections of genitourinary tract in pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
646.61	Infections of genitourinary tract in pregnancy, with delivery	ICD-9-CM	Diagnosis
646.62	Infections of genitourinary tract in pregnancy, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
646.63	Infections of genitourinary tract antepartum	ICD-9-CM	Diagnosis
646.64	Infections of genitourinary tract in pregnancy, postpartum condition or complication	ICD-9-CM	Diagnosis
646.7	Liver and biliary tract disorders in pregnancy	ICD-9-CM	Diagnosis
646.70	Liver and biliary tract disorders in pregnancy, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
646.71	Liver and biliary tract disorders in pregnancy, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

Code	Description	Code Type	Code Category
646.73	Liver and biliary tract disorders in pregnancy, antepartum condition or complication	ICD-9-CM	Diagnosis
646.8	Other specified complications of pregnancy	ICD-9-CM	Diagnosis
646.80	Other specified complication of pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
646.81	Other specified complication of pregnancy, with delivery	ICD-9-CM	Diagnosis
646.82	Other specified complications of pregnancy, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
646.83	Other specified complication, antepartum	ICD-9-CM	Diagnosis
646.84	Other specified complications of pregnancy, postpartum condition or complication	ICD-9-CM	Diagnosis
646.9	Unspecified complication of pregnancy	ICD-9-CM	Diagnosis
646.90	Unspecified complication of pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
646.91	Unspecified complication of pregnancy, with delivery	ICD-9-CM	Diagnosis
646.93	Unspecified complication of pregnancy, antepartum	ICD-9-CM	Diagnosis
647	Infectious and parasitic conditions in the mother classifiable elsewhere, but complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
647.0	Maternal syphilis complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
647.00	Maternal syphilis, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
647.01	Maternal syphilis, complicating pregnancy, with delivery	ICD-9-CM	Diagnosis
647.02	Maternal syphilis, complicating pregnancy, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
647.03	Maternal syphilis, antepartum	ICD-9-CM	Diagnosis
647.04	Maternal syphilis complicating pregnancy, childbrith, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
647.1	Maternal gonorrhea complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
647.10	Maternal gonorrhea complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
647.11	Maternal gonorrhea with delivery	ICD-9-CM	Diagnosis
647.12	Maternal gonorrhea, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
647.13	Maternal gonorrhea, antepartum	ICD-9-CM	Diagnosis
647.14	Maternal gonorrhea complicating pregnancy, childbrith, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
647.2	Other maternal venereal diseases complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
647.20	Other maternal venereal diseases, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
647.21	Other maternal venereal diseases with delivery	ICD-9-CM	Diagnosis
647.22	Other maternal venereal diseases with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
647.23	Other maternal venereal diseases, antepartum condition or complication	ICD-9-CM	Diagnosis
647.24	Other venereal diseases complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
647.3	Maternal tuberculosis complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
647.30	Maternal tuberculosis complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
647.31	Maternal tuberculosis with delivery	ICD-9-CM	Diagnosis
647.32	Maternal tuberculosis with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
647.33	Maternal tuberculosis, antepartum	ICD-9-CM	Diagnosis
647.34	Maternal tuberculosis complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
647.4	Maternal malaria complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
647.40	Maternal malaria complicating pregnancy, childbirth or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
647.41	Maternal malaria with delivery	ICD-9-CM	Diagnosis
647.42	Maternal malaria with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
647.43	Maternal malaria, antepartum	ICD-9-CM	Diagnosis
647.44	Maternal malaria, complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
647.5	Maternal rubella complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
647.50	Maternal rubella complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
647.51	Maternal rubella with delivery	ICD-9-CM	Diagnosis
647.52	Maternal rubella with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
647.53	Maternal rubella, antepartum	ICD-9-CM	Diagnosis
647.54	Maternal rubella complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
647.6	Other maternal viral disease complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
647.60	Other maternal viral disease complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
647.61	Other maternal viral disease with delivery	ICD-9-CM	Diagnosis
647.62	Other maternal viral disease with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
647.63	Other maternal viral disease, antepartum	ICD-9-CM	Diagnosis
647.64	Other maternal viral diseases complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
647.8	Other specified maternal infectious and parasitic disease complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
647.80	Other specified maternal infectious and parasitic disease complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
647.81	Other specified maternal infectious and parasitic disease with delivery	ICD-9-CM	Diagnosis
647.82	Other specified maternal infectious and parasitic disease with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
647.83	Other specified maternal infectious and parasitic disease, antepartum	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
647.84	Other specified maternal infectious and parasitic diseases complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
647.9	Unspecified maternal infection or infestation complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
647.90	Unspecified maternal infection or infestation complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
647.91	Unspecified maternal infection or infestation with delivery	ICD-9-CM	Diagnosis
647.92	Unspecified maternal infection or infestation with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
647.93	Unspecified maternal infection or infestation, antepartum	ICD-9-CM	Diagnosis
647.94	Unspecified maternal infection or infestation complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
648	Other current conditions in the mother classifiable elsewhere, but complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
648.0	Maternal diabetes mellitus complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
648.00	Maternal diabetes mellitus, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
648.01	Maternal diabetes mellitus with delivery	ICD-9-CM	Diagnosis
648.02	Maternal diabetes mellitus with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
648.03	Maternal diabetes mellitus, antepartum	ICD-9-CM	Diagnosis
648.04	Maternal diabetes mellitus, complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
648.1	Thyroid dysfunction complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
648.10	Maternal thyroid dysfunction complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
648.11	Maternal thyroid dysfunction with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
648.12	Maternal thyroid dysfunction with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
648.13	Maternal thyroid dysfunction, antepartum condition or complication	ICD-9-CM	Diagnosis
648.14	Maternal thyroid dysfunction complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
648.2	Maternal anemia complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
648.20	Maternal anemia of mother, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
648.21	Maternal anemia, with delivery	ICD-9-CM	Diagnosis
648.22	Maternal anemia with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
648.23	Maternal anemia, antepartum	ICD-9-CM	Diagnosis
648.24	Maternal anemia complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
648.3	Maternal drug dependence complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
648.30	Maternal drug dependence complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
648.31	Maternal drug dependence, with delivery	ICD-9-CM	Diagnosis
648.32	Maternal drug dependence, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
648.33	Maternal drug dependence, antepartum	ICD-9-CM	Diagnosis
648.34	Maternal drug dependence complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
648.4	Maternal mental disorders complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
648.40	Maternal mental disorders, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
648.41	Maternal mental disorders, with delivery	ICD-9-CM	Diagnosis
648.42	Maternal mental disorders, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
648.43	Maternal mental disorders, antepartum	ICD-9-CM	Diagnosis
648.44	Maternal mental disorders complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
648.5	Maternal congenital cardiovascular disorders complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
648.50	Maternal congenital cardiovascular disorders, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
648.51	Maternal congenital cardiovascular disorders, with delivery	ICD-9-CM	Diagnosis
648.52	Maternal congenital cardiovascular disorders, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
648.53	Maternal congenital cardiovascular disorders, antepartum	ICD-9-CM	Diagnosis
648.54	Maternal congenital cardiovascular disorders complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
648.6	Other maternal cardiovascular diseases complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
648.60	Other maternal cardiovascular diseases complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
648.61	Other maternal cardiovascular diseases, with delivery	ICD-9-CM	Diagnosis
648.62	Other maternal cardiovascular diseases, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
648.63	Other maternal cardiovascular diseases, antepartum	ICD-9-CM	Diagnosis
648.64	Other maternal cardiovascular diseases complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
648.7	Bone and joint disorders of maternal back, pelvis, and lower limbs, complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
648.70	Bone and joint disorders of maternal back, pelvis, and lower limbs, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
648.71	Bone and joint disorders of maternal back, pelvis, and lower limbs, with delivery	ICD-9-CM	Diagnosis
648.72	Bone and joint disorders of maternal back, pelvis, and lower limbs, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
648.73	Bone and joint disorders of maternal back, pelvis, and lower limbs, antepartum	ICD-9-CM	Diagnosis
648.74	Bone and joint disorders of maternal back, pelvis, and lower limbs complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
648.8	Abnormal maternal glucose tolerance, complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
648.80	Abnormal maternal glucose tolerance, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
648.81	Abnormal maternal glucose tolerance, with delivery	ICD-9-CM	Diagnosis
648.82	Abnormal maternal glucose tolerance, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
648.83	Abnormal maternal glucose tolerance, antepartum	ICD-9-CM	Diagnosis
648.84	Abnormal maternal glucose tolerance complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
648.9	Other current maternal conditions complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
648.90	Other current maternal conditions classifiable elsewhere, complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
648.91	Other current maternal conditions classifiable elsewhere, with delivery	ICD-9-CM	Diagnosis
648.92	Other current maternal conditions classifiable elsewhere, with delivery, with current postpartum complication	ICD-9-CM	Diagnosis
648.93	Other current maternal conditions classifiable elsewhere, antepartum	ICD-9-CM	Diagnosis
648.94	Other current maternal conditions classifiable elsewhere complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
649	Other conditions or status of the mother complicating pregnancy, childbirth, or puerperium	ICD-9-CM	Diagnosis
649.0	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
649.00	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
649.01	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
649.02	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
649.03	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
649.04	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
649.1	Obesity complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
649.10	Obesity complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
649.11	Obesity complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
649.12	Obesity complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
649.13	Obesity complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication	ICD-9-CM	Diagnosis
649.14	Obesity complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
649.2	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
649.20	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
649.21	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
649.22	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
649.23	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication	ICD-9-CM	Diagnosis
649.24	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
649.3	Coagulation defects complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
649.30	Coagulation defects complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
649.31	Coagulation defects complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
649.32	Coagulation defects complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
649.33	Coagulation defects complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication	ICD-9-CM	Diagnosis
649.34	Coagulation defects complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
649.4	Epilepsy complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
649.40	Epilepsy complicating pregnancy, childbirth, or the puerperium, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
649.41	Epilepsy complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
649.42	Epilepsy complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
649.43	Epilepsy complicating pregnancy, childbirth, or the puerperium, antepartum condition or complication	ICD-9-CM	Diagnosis
649.44	Epilepsy complicating pregnancy, childbirth, or the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
649.5	Spotting complicating pregnancy	ICD-9-CM	Diagnosis
649.50	Spotting complicating pregnancy, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
649.51	Spotting complicating pregnancy, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
649.53	Spotting complicating pregnancy, antepartum condition or complication	ICD-9-CM	Diagnosis
649.6	Uterine size date discrepancy	ICD-9-CM	Diagnosis
649.60	Uterine size date discrepancy, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
649.61	Uterine size date discrepancy, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
649.62	Uterine size date discrepancy, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
649.63	Uterine size date discrepancy, antepartum condition or complication	ICD-9-CM	Diagnosis
649.64	Uterine size date discrepancy, postpartum condition or complication	ICD-9-CM	Diagnosis
649.7	Cervical shortening	ICD-9-CM	Diagnosis
649.70	Cervical shortening, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
649.71	Cervical shortening, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
649.73	Cervical shortening, antepartum condition or complication	ICD-9-CM	Diagnosis
649.8	Onset (spontaneous) of labor after 37 completed weeks of gestation but before 39 completed weeks gestation, with delivery by (planned) cesarean section	ICD-9-CM	Diagnosis
649.81	Onset (spontaneous) of labor after 37 completed weeks of gestation but before 39 completed weeks gestation, with delivery by (planned) cesarean section, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
649.82	Onset (spontaneous) of labor after 37 completed weeks of gestation but before 39 completed weeks gestation, with delivery by (planned) cesarean section, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
650	Normal delivery	ICD-9-CM	Diagnosis
651	Multiple gestation	ICD-9-CM	Diagnosis
651.0	Twin pregnancy	ICD-9-CM	Diagnosis
651.00	Twin pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
651.01	Twin pregnancy, delivered	ICD-9-CM	Diagnosis
651.03	Twin pregnancy, antepartum	ICD-9-CM	Diagnosis
651.1	Triplet pregnancy	ICD-9-CM	Diagnosis
651.10	Triplet pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
651.11	Triplet pregnancy, delivered	ICD-9-CM	Diagnosis
651.13	Triplet pregnancy, antepartum	ICD-9-CM	Diagnosis
651.2	Quadruplet pregnancy	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
651.20	Quadruplet pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
651.21	Quadruplet pregnancy, delivered	ICD-9-CM	Diagnosis
651.23	Quadruplet pregnancy, antepartum	ICD-9-CM	Diagnosis
651.3	Twin pregnancy with fetal loss and retention of one fetus	ICD-9-CM	Diagnosis
651.30	Twin pregnancy with fetal loss and retention of one fetus, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
651.31	Twin pregnancy with fetal loss and retention of one fetus, delivered	ICD-9-CM	Diagnosis
651.33	Twin pregnancy with fetal loss and retention of one fetus, antepartum	ICD-9-CM	Diagnosis
651.4	Triplet pregnancy with fetal loss and retention of one or more	ICD-9-CM	Diagnosis
651.40	Triplet pregnancy with fetal loss and retention of one or more, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
651.41	Triplet pregnancy with fetal loss and retention of one or more, delivered	ICD-9-CM	Diagnosis
651.43	Triplet pregnancy with fetal loss and retention of one or more, antepartum	ICD-9-CM	Diagnosis
651.5	Quadruplet pregnancy with fetal loss and retention of one or more	ICD-9-CM	Diagnosis
651.50	Quadruplet pregnancy with fetal loss and retention of one or more, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
651.51	Quadruplet pregnancy with fetal loss and retention of one or more, delivered	ICD-9-CM	Diagnosis
651.53	Quadruplet pregnancy with fetal loss and retention of one or more, antepartum	ICD-9-CM	Diagnosis
651.6	Other multiple pregnancy with fetal loss and retention of one or more fetus(es)	ICD-9-CM	Diagnosis
651.60	Other multiple pregnancy with fetal loss and retention of one or more fetus(es), unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
651.61	Other multiple pregnancy with fetal loss and retention of one or more fetus(es), delivered	ICD-9-CM	Diagnosis
651.63	Other multiple pregnancy with fetal loss and retention of one or more fetus(es), antepartum	ICD-9-CM	Diagnosis
651.7	Multiple gestation following (elective) fetal reduction	ICD-9-CM	Diagnosis
651.70	Multiple gestation following (elective) fetal reduction, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
651.71	Multiple gestation following (elective) fetal reduction, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
651.73	Multiple gestation following (elective) fetal reduction, antepartum condition or complication	ICD-9-CM	Diagnosis
651.8	Other specified multiple gestation	ICD-9-CM	Diagnosis
651.80	Other specified multiple gestation, unspecified as to episode of care	ICD-9-CM	Diagnosis
651.81	Other specified multiple gestation, delivered	ICD-9-CM	Diagnosis
651.83	Other specified multiple gestation, antepartum	ICD-9-CM	Diagnosis
651.9	Unspecified multiple gestation	ICD-9-CM	Diagnosis
651.90	Unspecified multiple gestation, unspecified as to episode of care	ICD-9-CM	Diagnosis
651.91	Unspecified multiple gestation, delivered	ICD-9-CM	Diagnosis
651.93	Unspecified multiple gestation, antepartum	ICD-9-CM	Diagnosis
652	Malposition and malpresentation of fetus	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
652.0	Unstable lie of fetus	ICD-9-CM	Diagnosis
652.00	Unstable lie of fetus, unspecified as to episode of care	ICD-9-CM	Diagnosis
652.01	Unstable lie of fetus, delivered	ICD-9-CM	Diagnosis
652.03	Unstable lie of fetus, antepartum	ICD-9-CM	Diagnosis
652.1	Breech or other malpresentation successfully converted to cephalic presentation	ICD-9-CM	Diagnosis
652.10	Breech or other malpresentation successfully converted to cephalic presentation, unspecified as to episode of care	ICD-9-CM	Diagnosis
652.11	Breech or other malpresentation successfully converted to cephalic presentation, delivered	ICD-9-CM	Diagnosis
652.13	Breech or other malpresentation successfully converted to cephalic presentation, antepartum	ICD-9-CM	Diagnosis
652.2	Breech presentation without mention of version	ICD-9-CM	Diagnosis
652.20	Breech presentation without mention of version, unspecified as to episode of care	ICD-9-CM	Diagnosis
652.21	Breech presentation without mention of version, delivered	ICD-9-CM	Diagnosis
652.23	Breech presentation without mention of version, antepartum	ICD-9-CM	Diagnosis
652.3	Transverse or oblique presentation of fetus	ICD-9-CM	Diagnosis
652.30	Transverse or oblique fetal presentation, unspecified as to episode of care	ICD-9-CM	Diagnosis
652.31	Transverse or oblique fetal presentation, delivered	ICD-9-CM	Diagnosis
652.33	Transverse or oblique fetal presentation, antepartum	ICD-9-CM	Diagnosis
652.4	Fetal face or brow presentation of fetus	ICD-9-CM	Diagnosis
652.40	Fetal face or brow presentation, unspecified as to episode of care	ICD-9-CM	Diagnosis
652.41	Fetal face or brow presentation, delivered	ICD-9-CM	Diagnosis
652.43	Fetal face or brow presentation, antepartum	ICD-9-CM	Diagnosis
652.5	High fetal head at term	ICD-9-CM	Diagnosis
652.50	High fetal head at term, unspecified as to episode of care	ICD-9-CM	Diagnosis
652.51	High fetal head at term, delivered	ICD-9-CM	Diagnosis
652.53	High fetal head at term, antepartum	ICD-9-CM	Diagnosis
652.6	Multiple gestation with malpresentation of one fetus or more	ICD-9-CM	Diagnosis
652.60	Multiple gestation with malpresentation of one fetus or more, unspecified as to episode of care	ICD-9-CM	Diagnosis
652.61	Multiple gestation with malpresentation of one fetus or more, delivered	ICD-9-CM	Diagnosis
652.63	Multiple gestation with malpresentation of one fetus or more, antepartum	ICD-9-CM	Diagnosis
652.7	Prolapsed arm of fetus	ICD-9-CM	Diagnosis
652.70	Prolapsed arm of fetus, unspecified as to episode of care	ICD-9-CM	Diagnosis
652.71	Prolapsed arm of fetus, delivered	ICD-9-CM	Diagnosis
652.73	Prolapsed arm of fetus, antepartum condition or complication	ICD-9-CM	Diagnosis
652.8	Other specified malposition or malpresentation of fetus	ICD-9-CM	Diagnosis
652.80	Other specified malposition or malpresentation of fetus, unspecified as to episode of care	ICD-9-CM	Diagnosis
652.81	Other specified malposition or malpresentation of fetus, delivered	ICD-9-CM	Diagnosis
652.83	Other specified malposition or malpresentation of fetus, antepartum	ICD-9-CM	Diagnosis
652.9	Unspecified malposition or malpresentation of fetus	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

Code	Description	Code Type	Code Category
652.90	Unspecified malposition or malpresentation of fetus, unspecified as to episode of care	ICD-9-CM	Diagnosis
652.91	Unspecified malposition or malpresentation of fetus, delivered	ICD-9-CM	Diagnosis
652.93	Unspecified malposition or malpresentation of fetus, antepartum	ICD-9-CM	Diagnosis
653	Disproportion in pregnancy, labor, and delivery	ICD-9-CM	Diagnosis
653.0	Major abnormality of bony pelvis, not further specified, in pregnancy	ICD-9-CM	Diagnosis
653.00	Major abnormality of bony pelvis, not further specified in pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
653.01	Major abnormality of bony pelvis, not further specified, delivered	ICD-9-CM	Diagnosis
653.03	Major abnormality of bony pelvis, not further specified, antepartum	ICD-9-CM	Diagnosis
653.1	Generally contracted pelvis in pregnancy	ICD-9-CM	Diagnosis
653.10	Generally contracted pelvis in pregnancy, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
653.11	Generally contracted pelvis in pregnancy, delivered	ICD-9-CM	Diagnosis
653.13	Generally contracted pelvis in pregnancy, antepartum	ICD-9-CM	Diagnosis
653.2	Inlet contraction of pelvis in pregnancy	ICD-9-CM	Diagnosis
653.20	Inlet contraction of pelvis in pregnancy, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
653.21	Inlet contraction of pelvis in pregnancy, delivered	ICD-9-CM	Diagnosis
653.23	Inlet contraction of pelvis in pregnancy, antepartum	ICD-9-CM	Diagnosis
653.3	Outlet contraction of pelvis in pregnancy	ICD-9-CM	Diagnosis
653.30	Outlet contraction of pelvis in pregnancy, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
653.31	Outlet contraction of pelvis in pregnancy, delivered	ICD-9-CM	Diagnosis
653.33	Outlet contraction of pelvis in pregnancy, antepartum	ICD-9-CM	Diagnosis
653.4	Fetopelvic disproportion	ICD-9-CM	Diagnosis
653.40	Fetopelvic disproportion, unspecified as to episode of care	ICD-9-CM	Diagnosis
653.41	Fetopelvic disproportion, delivered	ICD-9-CM	Diagnosis
653.43	Fetopelvic disproportion, antepartum	ICD-9-CM	Diagnosis
653.5	Unusually large fetus causing disproportion	ICD-9-CM	Diagnosis
653.50	Unusually large fetus causing disproportion, unspecified as to episode of care	ICD-9-CM	Diagnosis
653.51	Unusually large fetus causing disproportion, delivered	ICD-9-CM	Diagnosis
653.53	Unusually large fetus causing disproportion, antepartum	ICD-9-CM	Diagnosis
653.6	Hydrocephalic fetus causing disproportion	ICD-9-CM	Diagnosis
653.60	Hydrocephalic fetus causing disproportion, unspecified as to episode of care	ICD-9-CM	Diagnosis
653.61	Hydrocephalic fetus causing disproportion, delivered	ICD-9-CM	Diagnosis
653.63	Hydrocephalic fetus causing disproportion, antepartum	ICD-9-CM	Diagnosis
653.7	Other fetal abnormality causing disproportion	ICD-9-CM	Diagnosis
653.70	Other fetal abnormality causing disproportion, unspecified as to episode of care	ICD-9-CM	Diagnosis
653.71	Other fetal abnormality causing disproportion, delivered	ICD-9-CM	Diagnosis
653.73	Other fetal abnormality causing disproportion, antepartum	ICD-9-CM	Diagnosis
653.8	Fetal disproportion of other origin	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
653.80	Fetal disproportion of other origin, unspecified as to episode of care	ICD-9-CM	Diagnosis
653.81	Fetal disproportion of other origin, delivered	ICD-9-CM	Diagnosis
653.83	Fetal disproportion of other origin, antepartum	ICD-9-CM	Diagnosis
653.9	Unspecified fetal disproportion	ICD-9-CM	Diagnosis
653.90	Unspecified fetal disproportion, unspecified as to episode of care	ICD-9-CM	Diagnosis
653.91	Unspecified fetal disproportion, delivered	ICD-9-CM	Diagnosis
653.93	Unspecified fetal disproportion, antepartum	ICD-9-CM	Diagnosis
654	Abnormality of organs and soft tissues of pelvis complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
654.0	Congenital abnormalities of pregnant uterus complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
654.00	Congenital abnormalities of pregnant uterus, unspecified as to episode of care	ICD-9-CM	Diagnosis
654.01	Congenital abnormalities of pregnant uterus, delivered	ICD-9-CM	Diagnosis
654.02	Congenital abnormalities of pregnant uterus, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
654.03	Congenital abnormalities of pregnant uterus, antepartum	ICD-9-CM	Diagnosis
654.04	Congenital abnormalities of uterus, postpartum condition or complication	ICD-9-CM	Diagnosis
654.1	Tumors of body of pregnant uterus	ICD-9-CM	Diagnosis
654.10	Tumors of body of pregnant uterus, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
654.11	Tumors of body of uterus, delivered	ICD-9-CM	Diagnosis
654.12	Tumors of body of uterus, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
654.13	Tumors of body of uterus, antepartum condition or complication	ICD-9-CM	Diagnosis
654.14	Tumors of body of uterus, postpartum condition or complication	ICD-9-CM	Diagnosis
654.2	Previous cesarean section complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
654.20	Previous cesarean delivery, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
654.21	Previous cesarean delivery, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
654.23	Previous cesarean delivery, antepartum condition or complication	ICD-9-CM	Diagnosis
654.3	Retroverted and incarcerated gravid uterus	ICD-9-CM	Diagnosis
654.30	Retroverted and incarcerated gravid uterus, unspecified as to episode of care	ICD-9-CM	Diagnosis
654.31	Retroverted and incarcerated gravid uterus, delivered	ICD-9-CM	Diagnosis
654.32	Retroverted and incarcerated gravid uterus, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
654.33	Retroverted and incarcerated gravid uterus, antepartum	ICD-9-CM	Diagnosis
654.34	Retroverted and incarcerated gravid uterus, postpartum condition or complication	ICD-9-CM	Diagnosis
654.4	Other abnormalities in shape or position of gravid uterus and of neighboring structures	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
654.40	Other abnormalities in shape or position of gravid uterus and of neighboring structures, unspecified as to episode of care	ICD-9-CM	Diagnosis
654.41	Other abnormalities in shape or position of gravid uterus and of neighboring structures, delivered	ICD-9-CM	Diagnosis
654.42	Other abnormalities in shape or position of gravid uterus and of neighboring structures, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
654.43	Other abnormalities in shape or position of gravid uterus and of neighboring structures, antepartum	ICD-9-CM	Diagnosis
654.44	Other abnormalities in shape or position of gravid uterus and of neighboring structures, postpartum condition or complication	ICD-9-CM	Diagnosis
654.5	Cervical incompetence complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
654.50	Cervical incompetence, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
654.51	Cervical incompetence, delivered	ICD-9-CM	Diagnosis
654.52	Cervical incompetence, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
654.53	Cervical incompetence, antepartum condition or complication	ICD-9-CM	Diagnosis
654.54	Cervical incompetence, postpartum condition or complication	ICD-9-CM	Diagnosis
654.6	Other congenital or acquired abnormality of cervix complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
654.60	Other congenital or acquired abnormality of cervix, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
654.61	Other congenital or acquired abnormality of cervix, with delivery	ICD-9-CM	Diagnosis
654.62	Other congenital or acquired abnormality of cervix, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
654.63	Other congenital or acquired abnormality of cervix, antepartum condition or complication	ICD-9-CM	Diagnosis
654.64	Other congenital or acquired abnormality of cervix, postpartum condition or complication	ICD-9-CM	Diagnosis
654.7	Congenital or acquired abnormality of vagina complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
654.70	Congenital or acquired abnormality of vagina, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
654.71	Congenital or acquired abnormality of vagina, with delivery	ICD-9-CM	Diagnosis
654.72	Congenital or acquired abnormality of vagina, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
654.73	Congenital or acquired abnormality of vagina, antepartum condition or complication	ICD-9-CM	Diagnosis
654.74	Congenital or acquired abnormality of vagina, postpartum condition or complication	ICD-9-CM	Diagnosis
654.8	Congenital or acquired abnormality of vulva complicating pregnancy, childbirth, or the puerperium	ICD-9-CM	Diagnosis
654.80	Congenital or acquired abnormality of vulva, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
654.81	Congenital or acquired abnormality of vulva, with delivery	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
654.82	Congenital or acquired abnormality of vulva, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
654.83	Congenital or acquired abnormality of vulva, antepartum condition or complication	ICD-9-CM	Diagnosis
654.84	Congenital or acquired abnormality of vulva, postpartum condition or complication	ICD-9-CM	Diagnosis
654.9	Other and unspecified abnormality of organs and soft tissues of pelvis complicating pregnancy, childbirth, and the puerperium	ICD-9-CM	Diagnosis
654.90	Other and unspecified abnormality of organs and soft tissues of pelvis, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
654.91	Other and unspecified abnormality of organs and soft tissues of pelvis, with delivery	ICD-9-CM	Diagnosis
654.92	Other and unspecified abnormality of organs and soft tissues of pelvis, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
654.93	Other and unspecified abnormality of organs and soft tissues of pelvis, antepartum condition or complication	ICD-9-CM	Diagnosis
654.94	Other and unspecified abnormality of organs and soft tissues of pelvis, postpartum condition or complication	ICD-9-CM	Diagnosis
655	Known or suspected fetal abnormality affecting management of mother	ICD-9-CM	Diagnosis
655.0	Central nervous system malformation in fetus affecting management of mother	ICD-9-CM	Diagnosis
655.00	Central nervous system malformation in fetus, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
655.01	Central nervous system malformation in fetus, with delivery	ICD-9-CM	Diagnosis
655.03	Central nervous system malformation in fetus, antepartum	ICD-9-CM	Diagnosis
655.1	Chromosomal abnormality in fetus affecting management of mother	ICD-9-CM	Diagnosis
655.10	Chromosomal abnormality in fetus, affecting management of mother, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
655.11	Chromosomal abnormality in fetus, affecting management of mother, with delivery	ICD-9-CM	Diagnosis
655.13	Chromosomal abnormality in fetus, affecting management of mother, antepartum	ICD-9-CM	Diagnosis
655.2	Hereditary disease in family possibly affecting fetus, affecting management of mother	ICD-9-CM	Diagnosis
655.20	Hereditary disease in family possibly affecting fetus, affecting management of mother, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
655.21	Hereditary disease in family possibly affecting fetus, affecting management of mother, with delivery	ICD-9-CM	Diagnosis
655.23	Hereditary disease in family possibly affecting fetus, affecting management of mother, antepartum condition or complication	ICD-9-CM	Diagnosis
655.3	Suspected damage to fetus from viral disease in mother, affecting management of mother	ICD-9-CM	Diagnosis
655.30	Suspected damage to fetus from viral disease in mother, affecting management of mother, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
655.31	Suspected damage to fetus from viral disease in mother, affecting management of mother, with delivery	ICD-9-CM	Diagnosis
655.33	Suspected damage to fetus from viral disease in mother, affecting management of mother, antepartum condition or complication	ICD-9-CM	Diagnosis
655.4	Suspected damage to fetus from other disease in mother, affecting management of mother	ICD-9-CM	Diagnosis
655.40	Suspected damage to fetus from other disease in mother, affecting management of mother, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
655.41	Suspected damage to fetus from other disease in mother, affecting management of mother, with delivery	ICD-9-CM	Diagnosis
655.43	Suspected damage to fetus from other disease in mother, affecting management of mother, antepartum condition or complication	ICD-9-CM	Diagnosis
655.5	Suspected damage to fetus from drugs, affecting management of mother	ICD-9-CM	Diagnosis
655.50	Suspected damage to fetus from drugs, affecting management of mother, unspecified as to episode of care	ICD-9-CM	Diagnosis
655.51	Suspected damage to fetus from drugs, affecting management of mother, delivered	ICD-9-CM	Diagnosis
655.53	Suspected damage to fetus from drugs, affecting management of mother, antepartum	ICD-9-CM	Diagnosis
655.6	Suspected damage to fetus from radiation, affecting management of mother	ICD-9-CM	Diagnosis
655.60	Suspected damage to fetus from radiation, affecting management of mother, unspecified as to episode of care	ICD-9-CM	Diagnosis
655.61	Suspected damage to fetus from radiation, affecting management of mother, delivered	ICD-9-CM	Diagnosis
655.63	Suspected damage to fetus from radiation, affecting management of mother, antepartum condition or complication	ICD-9-CM	Diagnosis
655.7	Decreased fetal movements	ICD-9-CM	Diagnosis
655.70	Decreased fetal movements, unspecified as to episode of care	ICD-9-CM	Diagnosis
655.71	Decreased fetal movements, affecting management of mother, delivered	ICD-9-CM	Diagnosis
655.73	Decreased fetal movements, affecting management of mother, antepartum condition or complication	ICD-9-CM	Diagnosis
655.8	Other known or suspected fetal abnormality, not elsewhere classified, affecting management of mother	ICD-9-CM	Diagnosis
655.80	Other known or suspected fetal abnormality, not elsewhere classified, affecting management of mother, unspecified as to episode of care	ICD-9-CM	Diagnosis
655.81	Other known or suspected fetal abnormality, not elsewhere classified, affecting management of mother, delivery	ICD-9-CM	Diagnosis
655.83	Other known or suspected fetal abnormality, not elsewhere classified, affecting management of mother, antepartum condition or complication	ICD-9-CM	Diagnosis
655.9	Unspecified fetal abnormality affecting management of mother	ICD-9-CM	Diagnosis
655.90	Unspecified fetal abnormality affecting management of mother, unspecified as to episode of care	ICD-9-CM	Diagnosis
655.91	Unspecified fetal abnormality affecting management of mother, delivery	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
655.93	Unspecified fetal abnormality affecting management of mother, antepartum condition or complication	ICD-9-CM	Diagnosis
656	Other known or suspected fetal and placental problems affecting management of mother	ICD-9-CM	Diagnosis
656.0	Fetal-maternal hemorrhage affecting management of mother	ICD-9-CM	Diagnosis
656.00	Fetal-maternal hemorrhage, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
656.01	Fetal-maternal hemorrhage, with delivery	ICD-9-CM	Diagnosis
656.03	Fetal-maternal hemorrhage, antepartum condition or complication	ICD-9-CM	Diagnosis
656.1	Rhesus isoimmunization affecting management of mother	ICD-9-CM	Diagnosis
656.10	Rhesus isoimmunization unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
656.11	Rhesus isoimmunization affecting management of mother, delivered	ICD-9-CM	Diagnosis
656.13	Rhesus isoimmunization affecting management of mother, antepartum condition	ICD-9-CM	Diagnosis
656.2	Isoimmunization from other and unspecified blood-group incompatibility affecting management of mother	ICD-9-CM	Diagnosis
656.20	Isoimmunization from other and unspecified blood-group incompatibility, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
656.21	Isoimmunization from other and unspecified blood-group incompatibility, affecting management of mother, delivered	ICD-9-CM	Diagnosis
656.23	Isoimmunization from other and unspecified blood-group incompatibility, affecting management of mother, antepartum	ICD-9-CM	Diagnosis
656.3	Fetal distress affecting management of mother	ICD-9-CM	Diagnosis
656.30	Fetal distress affecting management of mother, unspecified as to episode of care	ICD-9-CM	Diagnosis
656.31	Fetal distress affecting management of mother, delivered	ICD-9-CM	Diagnosis
656.33	Fetal distress affecting management of mother, antepartum	ICD-9-CM	Diagnosis
656.4	Intrauterine death affecting management of mother	ICD-9-CM	Diagnosis
656.40	Intrauterine death affecting management of mother, unspecified as to episode of care	ICD-9-CM	Diagnosis
656.41	Intrauterine death affecting management of mother, delivered	ICD-9-CM	Diagnosis
656.43	Intrauterine death affecting management of mother, antepartum	ICD-9-CM	Diagnosis
656.5	Poor fetal growth affecting management of mother	ICD-9-CM	Diagnosis
656.50	Poor fetal growth, affecting management of mother, unspecified as to episode of care	ICD-9-CM	Diagnosis
656.51	Poor fetal growth, affecting management of mother, delivered	ICD-9-CM	Diagnosis
656.53	Poor fetal growth, affecting management of mother, antepartum condition or complication	ICD-9-CM	Diagnosis
656.6	Excessive fetal growth affecting management of mother	ICD-9-CM	Diagnosis
656.60	Excessive fetal growth affecting management of mother, unspecified as to episode of care	ICD-9-CM	Diagnosis
656.61	Excessive fetal growth affecting management of mother, delivered	ICD-9-CM	Diagnosis
656.63	Excessive fetal growth affecting management of mother, antepartum	ICD-9-CM	Diagnosis
656.7	Other placental conditions affecting management of mother	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
656.70	Other placental conditions affecting management of mother, unspecified as to episode of care	ICD-9-CM	Diagnosis
656.71	Other placental conditions affecting management of mother, delivered	ICD-9-CM	Diagnosis
656.73	Other placental conditions affecting management of mother, antepartum	ICD-9-CM	Diagnosis
656.8	Other specified fetal and placental problems affecting management of mother	ICD-9-CM	Diagnosis
656.80	Other specified fetal and placental problems affecting management of mother, unspecified as to episode of care	ICD-9-CM	Diagnosis
656.81	Other specified fetal and placental problems affecting management of mother, delivered	ICD-9-CM	Diagnosis
656.83	Other specified fetal and placental problems affecting management of mother, antepartum	ICD-9-CM	Diagnosis
656.9	Unspecified fetal and placental problem affecting management of mother	ICD-9-CM	Diagnosis
656.90	Unspecified fetal and placental problem affecting management of mother, unspecified as to episode of care	ICD-9-CM	Diagnosis
656.91	Unspecified fetal and placental problem affecting management of mother, delivered	ICD-9-CM	Diagnosis
656.93	Unspecified fetal and placental problem affecting management of mother, antepartum	ICD-9-CM	Diagnosis
657	Polyhydramnios	ICD-9-CM	Diagnosis
657.0	Polyhydramnios	ICD-9-CM	Diagnosis
657.00	Polyhydramnios, unspecified as to episode of care	ICD-9-CM	Diagnosis
657.01	Polyhydramnios, with delivery	ICD-9-CM	Diagnosis
657.03	Polyhydramnios, antepartum complication	ICD-9-CM	Diagnosis
658	Other problems associated with amniotic cavity and membranes	ICD-9-CM	Diagnosis
658.0	Oligohydramnios	ICD-9-CM	Diagnosis
658.00	Oligohydramnios, unspecified as to episode of care	ICD-9-CM	Diagnosis
658.01	Oligohydramnios, delivered	ICD-9-CM	Diagnosis
658.03	Oligohydramnios, antepartum	ICD-9-CM	Diagnosis
658.1	Premature rupture of membranes in pregnancy	ICD-9-CM	Diagnosis
658.10	Premature rupture of membranes in pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
658.11	Premature rupture of membranes in pregnancy, delivered	ICD-9-CM	Diagnosis
658.13	Premature rupture of membranes in pregnancy, antepartum	ICD-9-CM	Diagnosis
658.2	Delayed delivery after spontaneous or unspecified rupture of membranes	ICD-9-CM	Diagnosis
658.20	Delayed delivery after spontaneous or unspecified rupture of membranes, unspecified as to episode of care	ICD-9-CM	Diagnosis
658.21	Delayed delivery after spontaneous or unspecified rupture of membranes, delivered	ICD-9-CM	Diagnosis
658.23	Delayed delivery after spontaneous or unspecified rupture of membranes, antepartum	ICD-9-CM	Diagnosis
658.3	Delayed delivery after artificial rupture of membranes	ICD-9-CM	Diagnosis
658.30	Delayed delivery after artificial rupture of membranes, unspecified as to episode of care	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
658.31	Delayed delivery after artificial rupture of membranes, delivered	ICD-9-CM	Diagnosis
658.33	Delayed delivery after artificial rupture of membranes, antepartum	ICD-9-CM	Diagnosis
658.4	Infection of amniotic cavity	ICD-9-CM	Diagnosis
658.40	Infection of amniotic cavity, unspecified as to episode of care	ICD-9-CM	Diagnosis
658.41	Infection of amniotic cavity, delivered	ICD-9-CM	Diagnosis
658.43	Infection of amniotic cavity, antepartum	ICD-9-CM	Diagnosis
658.8	Other problems associated with amniotic cavity and membranes	ICD-9-CM	Diagnosis
658.80	Other problem associated with amniotic cavity and membranes, unspecified as to episode of care	ICD-9-CM	Diagnosis
658.81	Other problem associated with amniotic cavity and membranes, delivered	ICD-9-CM	Diagnosis
658.83	Other problem associated with amniotic cavity and membranes, antepartum	ICD-9-CM	Diagnosis
658.9	Unspecified problem associated with amniotic cavity and membranes	ICD-9-CM	Diagnosis
658.90	Unspecified problem associated with amniotic cavity and membranes, unspecified as to episode of care	ICD-9-CM	Diagnosis
658.91	Unspecified problem associated with amniotic cavity and membranes, delivered	ICD-9-CM	Diagnosis
658.93	Unspecified problem associated with amniotic cavity and membranes, antepartum	ICD-9-CM	Diagnosis
659	Other indications for care or intervention related to labor and delivery, not elsewhere classified	ICD-9-CM	Diagnosis
659.0	Failed mechanical induction of labor	ICD-9-CM	Diagnosis
659.00	Failed mechanical induction of labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
659.01	Failed mechanical induction of labor, delivered	ICD-9-CM	Diagnosis
659.03	Failed mechanical induction of labor, antepartum	ICD-9-CM	Diagnosis
659.1	Failed medical or unspecified induction of labor	ICD-9-CM	Diagnosis
659.10	Failed medical or unspecified induction of labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
659.11	Failed medical or unspecified induction of labor, delivered	ICD-9-CM	Diagnosis
659.13	Failed medical or unspecified induction of labor, antepartum	ICD-9-CM	Diagnosis
659.2	Maternal pyrexia during labor, unspecified	ICD-9-CM	Diagnosis
659.20	Unspecified maternal pyrexia during labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
659.21	Unspecified maternal pyrexia during labor, delivered	ICD-9-CM	Diagnosis
659.23	Unspecified maternal pyrexia, antepartum	ICD-9-CM	Diagnosis
659.3	Generalized infection during labor	ICD-9-CM	Diagnosis
659.30	Generalized infection during labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
659.31	Generalized infection during labor, delivered	ICD-9-CM	Diagnosis
659.33	Generalized infection during labor, antepartum	ICD-9-CM	Diagnosis
659.4	Grand multiparity, with current pregnancy	ICD-9-CM	Diagnosis
659.40	Grand multiparity with current pregnancy, unspecified as to episode of care	ICD-9-CM	Diagnosis
659.41	Grand multiparity, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
659.43	Grand multiparity with current pregnancy, antepartum	ICD-9-CM	Diagnosis
659.5	Elderly primigravida	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
659.50	Elderly primigravida, unspecified as to episode of care	ICD-9-CM	Diagnosis
659.51	Elderly primigravida, delivered	ICD-9-CM	Diagnosis
659.53	Elderly primigravida, antepartum	ICD-9-CM	Diagnosis
659.6	Elderly multigravida	ICD-9-CM	Diagnosis
659.60	Elderly multigravida, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
659.61	Elderly multigravida, delivered, with mention of antepartum condition	ICD-9-CM	Diagnosis
659.63	Elderly multigravida, with antepartum condition or complication	ICD-9-CM	Diagnosis
659.7	Abnormality in fetal heart rate or rhythm	ICD-9-CM	Diagnosis
659.70	Abnormality in fetal heart rate or rhythm, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
659.71	Abnormality in fetal heart rate or rhythm, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
659.73	Abnormality in fetal heart rate or rhythm, antepartum condition or complication	ICD-9-CM	Diagnosis
659.8	Other specified indications for care or intervention related to labor and delivery	ICD-9-CM	Diagnosis
659.80	Other specified indication for care or intervention related to labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
659.81	Other specified indication for care or intervention related to labor and delivery, delivered	ICD-9-CM	Diagnosis
659.83	Other specified indication for care or intervention related to labor and delivery, antepartum	ICD-9-CM	Diagnosis
659.9	Unspecified indication for care or intervention related to labor and delivery	ICD-9-CM	Diagnosis
659.90	Unspecified indication for care or intervention related to labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
659.91	Unspecified indication for care or intervention related to labor and delivery, delivered	ICD-9-CM	Diagnosis
659.93	Unspecified indication for care or intervention related to labor and delivery, antepartum	ICD-9-CM	Diagnosis
660	Obstructed labor	ICD-9-CM	Diagnosis
660.0	Obstruction caused by malposition of fetus at onset of labor	ICD-9-CM	Diagnosis
660.00	Obstruction caused by malposition of fetus at onset of labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
660.01	Obstruction caused by malposition of fetus at onset of labor, delivered	ICD-9-CM	Diagnosis
660.03	Obstruction caused by malposition of fetus at onset of labor, antepartum	ICD-9-CM	Diagnosis
660.1	Obstruction by bony pelvis during labor and delivery	ICD-9-CM	Diagnosis
660.10	Obstruction by bony pelvis during labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
660.11	Obstruction by bony pelvis during labor and delivery, delivered	ICD-9-CM	Diagnosis
660.13	Obstruction by bony pelvis during labor and delivery, antepartum	ICD-9-CM	Diagnosis
660.2	Obstruction by abnormal pelvic soft tissues during labor and delivery	ICD-9-CM	Diagnosis
660.20	Obstruction by abnormal pelvic soft tissues during labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
660.21	Obstruction by abnormal pelvic soft tissues during labor and delivery, delivered	ICD-9-CM	Diagnosis
660.23	Obstruction by abnormal pelvic soft tissues during labor and delivery, antepartum	ICD-9-CM	Diagnosis
660.3	Deep transverse arrest and persistent occipitoposterior position during labor and delivery	ICD-9-CM	Diagnosis
660.30	Deep transverse arrest and persistent occipitoposterior position during labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
660.31	Deep transverse arrest and persistent occipitoposterior position during labor and deliver, delivered	ICD-9-CM	Diagnosis
660.33	Deep transverse arrest and persistent occipitoposterior position during labor and delivery, antepartum	ICD-9-CM	Diagnosis
660.4	Shoulder (girdle) dystocia during labor and delivery	ICD-9-CM	Diagnosis
660.40	Shoulder (girdle) dystocia during labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
660.41	Shoulder (girdle) dystocia during labor and deliver, delivered	ICD-9-CM	Diagnosis
660.43	Shoulder (girdle) dystocia during labor and delivery, antepartum	ICD-9-CM	Diagnosis
660.5	Locked twins	ICD-9-CM	Diagnosis
660.50	Locked twins during labor and delivery, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
660.51	Locked twins, delivered	ICD-9-CM	Diagnosis
660.53	Locked twins, antepartum	ICD-9-CM	Diagnosis
660.6	Unspecified failed trial of labor	ICD-9-CM	Diagnosis
660.60	Unspecified failed trial of labor, unspecified as to episode	ICD-9-CM	Diagnosis
660.61	Unspecified failed trial of labor, delivered	ICD-9-CM	Diagnosis
660.63	Unspecified failed trial of labor, antepartum	ICD-9-CM	Diagnosis
660.7	Unspecified failed forceps or vacuum extractor	ICD-9-CM	Diagnosis
660.70	Unspecified failed forceps or vacuum extractor, unspecified as to episode of care	ICD-9-CM	Diagnosis
660.71	Unspecified failed forceps or vacuum extractor, delivered	ICD-9-CM	Diagnosis
660.73	Failed forceps or vacuum extractor, unspecified, antepartum	ICD-9-CM	Diagnosis
660.8	Other causes of obstructed labor	ICD-9-CM	Diagnosis
660.80	Other causes of obstructed labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
660.81	Other causes of obstructed labor, delivered	ICD-9-CM	Diagnosis
660.83	Other causes of obstructed labor, antepartum	ICD-9-CM	Diagnosis
660.9	Unspecified obstructed labor	ICD-9-CM	Diagnosis
660.90	Unspecified obstructed labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
660.91	Unspecified obstructed labor, with delivery	ICD-9-CM	Diagnosis
660.93	Unspecified obstructed labor, antepartum	ICD-9-CM	Diagnosis
661	Abnormality of forces of labor	ICD-9-CM	Diagnosis
661.0	Primary uterine inertia	ICD-9-CM	Diagnosis
661.00	Primary uterine inertia, unspecified as to episode of care	ICD-9-CM	Diagnosis
661.01	Primary uterine inertia, with delivery	ICD-9-CM	Diagnosis
661.03	Primary uterine inertia, antepartum	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
661.1	Secondary uterine inertia	ICD-9-CM	Diagnosis
661.10	Secondary uterine inertia, unspecified as to episode of care	ICD-9-CM	Diagnosis
661.11	Secondary uterine inertia, with delivery	ICD-9-CM	Diagnosis
661.13	Secondary uterine inertia, antepartum	ICD-9-CM	Diagnosis
661.2	Other and unspecified uterine inertia	ICD-9-CM	Diagnosis
661.20	Other and unspecified uterine inertia, unspecified as to episode of care	ICD-9-CM	Diagnosis
661.21	Other and unspecified uterine inertia, with delivery	ICD-9-CM	Diagnosis
661.23	Other and unspecified uterine inertia, antepartum	ICD-9-CM	Diagnosis
661.3	Precipitate labor	ICD-9-CM	Diagnosis
661.30	Precipitate labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
661.31	Precipitate labor, with delivery	ICD-9-CM	Diagnosis
661.33	Precipitate labor, antepartum	ICD-9-CM	Diagnosis
661.4	Hypertonic, incoordinate, or prolonged uterine contractions	ICD-9-CM	Diagnosis
661.40	Hypertonic, incoordinate, or prolonged uterine contractions, unspecified as to episode of care	ICD-9-CM	Diagnosis
661.41	Hypertonic, incoordinate, or prolonged uterine contractions, with delivery	ICD-9-CM	Diagnosis
661.43	Hypertonic, incoordinate, or prolonged uterine contractions, antepartum	ICD-9-CM	Diagnosis
661.9	Unspecified abnormality of labor	ICD-9-CM	Diagnosis
661.90	Unspecified abnormality of labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
661.91	Unspecified abnormality of labor, with delivery	ICD-9-CM	Diagnosis
661.93	Unspecified abnormality of labor, antepartum	ICD-9-CM	Diagnosis
662	Long labor	ICD-9-CM	Diagnosis
662.0	Prolonged first stage of labor	ICD-9-CM	Diagnosis
662.00	Prolonged first stage of labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
662.01	Prolonged first stage of labor, delivered	ICD-9-CM	Diagnosis
662.03	Prolonged first stage of labor, antepartum	ICD-9-CM	Diagnosis
662.1	Unspecified prolonged labor	ICD-9-CM	Diagnosis
662.10	Unspecified prolonged labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
662.11	Unspecified prolonged labor, delivered	ICD-9-CM	Diagnosis
662.13	Unspecified prolonged labor, antepartum	ICD-9-CM	Diagnosis
662.2	Prolonged second stage of labor	ICD-9-CM	Diagnosis
662.20	Prolonged second stage of labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
662.21	Prolonged second stage of labor, delivered	ICD-9-CM	Diagnosis
662.23	Prolonged second stage of labor, antepartum	ICD-9-CM	Diagnosis
662.3	Delayed delivery of second twin, triplet, etc.	ICD-9-CM	Diagnosis
662.30	Delayed delivery of second twin, triplet, etc., unspecified as to episode of care	ICD-9-CM	Diagnosis
662.31	Delayed delivery of second twin, triplet, etc., delivered	ICD-9-CM	Diagnosis
662.33	Delayed delivery of second twin, triplet, etc., antepartum	ICD-9-CM	Diagnosis
663	Umbilical cord complications during labor and delivery	ICD-9-CM	Diagnosis
663.0	Prolapse of cord, complicating labor and delivery	ICD-9-CM	Diagnosis
663.00	Prolapse of cord, complicating labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
663.01	Prolapse of cord, complicating labor and delivery, delivered	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
663.03	Prolapse of cord, complicating labor and delivery, antepartum	ICD-9-CM	Diagnosis
663.1	Cord around neck, with compression, complicating labor and delivery	ICD-9-CM	Diagnosis
663.10	Cord around neck, with compression, complicating labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
663.11	Cord around neck, with compression, complicating labor and delivery, delivered	ICD-9-CM	Diagnosis
663.13	Cord around neck, with compression, complicating labor and delivery, antepartum	ICD-9-CM	Diagnosis
663.2	Other and unspecified cord entanglement, with compression, complicating labor and delivery	ICD-9-CM	Diagnosis
663.20	Other and unspecified cord entanglement, with compression, complicating labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
663.21	Other and unspecified cord entanglement, with compression, complicating labor and delivery, delivered	ICD-9-CM	Diagnosis
663.23	Other and unspecified cord entanglement, with compression, complicating labor and delivery, antepartum	ICD-9-CM	Diagnosis
663.3	Other and unspecified cord entanglement, without mention of compression, complicating labor and delivery	ICD-9-CM	Diagnosis
663.30	Other and unspecified cord entanglement, without mention of compression, complicating labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
663.31	Other and unspecified cord entanglement, without mention of compression, complicating labor and delivery, delivered	ICD-9-CM	Diagnosis
663.33	Other and unspecified cord entanglement, without mention of compression, complicating labor and delivery, antepartum	ICD-9-CM	Diagnosis
663.4	Short cord complicating labor and delivery	ICD-9-CM	Diagnosis
663.40	Short cord complicating labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
663.41	Short cord complicating labor and delivery, delivered	ICD-9-CM	Diagnosis
663.43	Short cord complicating labor and delivery, antepartum	ICD-9-CM	Diagnosis
663.5	Vasa previa complicating labor and delivery	ICD-9-CM	Diagnosis
663.50	Vasa previa complicating labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
663.51	Vasa previa complicating labor and delivery, delivered	ICD-9-CM	Diagnosis
663.53	Vasa previa complicating labor and delivery, antepartum	ICD-9-CM	Diagnosis
663.6	Vascular lesions of cord complicating labor and delivery	ICD-9-CM	Diagnosis
663.60	Vascular lesions of cord complicating labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
663.61	Vascular lesions of cord complicating labor and delivery, delivered	ICD-9-CM	Diagnosis
663.63	Vascular lesions of cord complicating labor and delivery, antepartum	ICD-9-CM	Diagnosis
663.8	Other umbilical cord complications during labor and delivery	ICD-9-CM	Diagnosis
663.80	Other umbilical cord complications during labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
663.81	Other umbilical cord complications during labor and delivery, delivered	ICD-9-CM	Diagnosis
663.83	Other umbilical cord complications during labor and delivery, antepartum	ICD-9-CM	Diagnosis
663.9	Unspecified umbilical cord complication during labor and delivery	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
663.90	Unspecified umbilical cord complication during labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
663.91	Unspecified umbilical cord complication during labor and delivery, delivered	ICD-9-CM	Diagnosis
663.93	Unspecified umbilical cord complication during labor and delivery, antepartum	ICD-9-CM	Diagnosis
664	Trauma to perineum and vulva during delivery	ICD-9-CM	Diagnosis
664.0	First-degree perineal laceration during delivery	ICD-9-CM	Diagnosis
664.00	First-degree perineal laceration, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
664.01	First-degree perineal laceration, with delivery	ICD-9-CM	Diagnosis
664.04	First-degree perineal laceration, postpartum condition or complication	ICD-9-CM	Diagnosis
664.1	Second-degree perineal laceration during delivery	ICD-9-CM	Diagnosis
664.10	Second-degree perineal laceration, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
664.11	Second-degree perineal laceration, with delivery	ICD-9-CM	Diagnosis
664.14	Second-degree perineal laceration, postpartum condition or complication	ICD-9-CM	Diagnosis
664.2	Third-degree perineal laceration during delivery	ICD-9-CM	Diagnosis
664.20	Third-degree perineal laceration, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
664.21	Third-degree perineal laceration, with delivery	ICD-9-CM	Diagnosis
664.24	Third-degree perineal laceration, postpartum condition or complication	ICD-9-CM	Diagnosis
664.3	Fourth-degree perineal laceration during delivery	ICD-9-CM	Diagnosis
664.30	Fourth-degree perineal laceration, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
664.31	Fourth-degree perineal laceration, with delivery	ICD-9-CM	Diagnosis
664.34	Fourth-degree perineal laceration, postpartum condition or complication	ICD-9-CM	Diagnosis
664.4	Unspecified perineal laceration during delivery	ICD-9-CM	Diagnosis
664.40	Unspecified perineal laceration, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
664.41	Unspecified perineal laceration, with delivery	ICD-9-CM	Diagnosis
664.44	Unspecified perineal laceration, postpartum condition or complication	ICD-9-CM	Diagnosis
664.5	Vulvar and perineal hematoma during delivery	ICD-9-CM	Diagnosis
664.50	Vulvar and perineal hematoma, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
664.51	Vulvar and perineal hematoma, with delivery	ICD-9-CM	Diagnosis
664.54	Vulvar and perineal hematoma, postpartum condition or complication	ICD-9-CM	Diagnosis
664.6	Anal sphincter tear complicating delivery, not associated with third-degree perineal laceration	ICD-9-CM	Diagnosis
664.60	Anal sphincter tear complicating delivery, not associated with third-degree perineal laceration, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
664.61	Anal sphincter tear complicating delivery, not associated with third-degree perineal laceration, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
664.64	Anal sphincter tear complicating delivery, not associated with third-degree perineal laceration, postpartum condition or complication	ICD-9-CM	Diagnosis
664.8	Other specified trauma to perineum and vulva during delivery	ICD-9-CM	Diagnosis
664.80	Other specified trauma to perineum and vulva, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
664.81	Other specified trauma to perineum and vulva, with delivery	ICD-9-CM	Diagnosis
664.84	Other specified trauma to perineum and vulva, postpartum condition or complication	ICD-9-CM	Diagnosis
664.9	Unspecified trauma to perineum and vulva during delivery	ICD-9-CM	Diagnosis
664.90	Unspecified trauma to perineum and vulva, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
664.91	Unspecified trauma to perineum and vulva, with delivery	ICD-9-CM	Diagnosis
664.94	Unspecified trauma to perineum and vulva, postpartum condition or complication	ICD-9-CM	Diagnosis
665	Other obstetrical trauma	ICD-9-CM	Diagnosis
665.0	Rupture of uterus before onset of labor	ICD-9-CM	Diagnosis
665.00	Rupture of uterus before onset of labor, unspecified as to episode of care	ICD-9-CM	Diagnosis
665.01	Rupture of uterus before onset of labor, with delivery	ICD-9-CM	Diagnosis
665.03	Rupture of uterus before onset of labor, antepartum	ICD-9-CM	Diagnosis
665.1	Rupture of uterus during and after labor	ICD-9-CM	Diagnosis
665.10	Rupture of uterus during labor, unspecified as to episode	ICD-9-CM	Diagnosis
665.11	Rupture of uterus during labor, with delivery	ICD-9-CM	Diagnosis
665.2	Obstetrical inversion of uterus	ICD-9-CM	Diagnosis
665.20	Inversion of uterus, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
665.22	Inversion of uterus, delivered with postpartum complication	ICD-9-CM	Diagnosis
665.24	Inversion of uterus, postpartum condition or complication	ICD-9-CM	Diagnosis
665.3	Obstetrical laceration of cervix	ICD-9-CM	Diagnosis
665.30	Laceration of cervix, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
665.31	Laceration of cervix, with delivery	ICD-9-CM	Diagnosis
665.34	Laceration of cervix, postpartum condition or complication	ICD-9-CM	Diagnosis
665.4	High vaginal laceration during and after labor	ICD-9-CM	Diagnosis
665.40	High vaginal laceration, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
665.41	High vaginal laceration, with delivery	ICD-9-CM	Diagnosis
665.44	High vaginal laceration, postpartum condition or complication	ICD-9-CM	Diagnosis
665.5	Other obstetrical injury to pelvic organs	ICD-9-CM	Diagnosis
665.50	Other injury to pelvic organs, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
665.51	Other injury to pelvic organs, with delivery	ICD-9-CM	Diagnosis
665.54	Other injury to pelvic organs, postpartum condition or complication	ICD-9-CM	Diagnosis
665.6	Obstetrical damage to pelvic joints and ligaments	ICD-9-CM	Diagnosis
665.60	Damage to pelvic joints and ligaments, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
665.61	Damage to pelvic joints and ligaments, with delivery	ICD-9-CM	Diagnosis
665.64	Damage to pelvic joints and ligaments, postpartum condition or complication	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
665.7	Obstetrical pelvic hematoma	ICD-9-CM	Diagnosis
665.70	Pelvic hematoma, unspecified as to episode of care	ICD-9-CM	Diagnosis
665.71	Pelvic hematoma, with delivery	ICD-9-CM	Diagnosis
665.72	Pelvic hematoma, delivered with postpartum complication	ICD-9-CM	Diagnosis
665.74	Pelvic hematoma, postpartum condition or complication	ICD-9-CM	Diagnosis
665.8	Other specified obstetrical trauma	ICD-9-CM	Diagnosis
665.80	Other specified obstetrical trauma, unspecified as to episode of care	ICD-9-CM	Diagnosis
665.81	Other specified obstetrical trauma, with delivery	ICD-9-CM	Diagnosis
665.82	Other specified obstetrical trauma, delivered, with postpartum	ICD-9-CM	Diagnosis
665.83	Other specified obstetrical trauma, antepartum	ICD-9-CM	Diagnosis
665.84	Other specified obstetrical trauma, postpartum condition or complication	ICD-9-CM	Diagnosis
665.9	Unspecified obstetrical trauma	ICD-9-CM	Diagnosis
665.90	Unspecified obstetrical trauma, unspecified as to episode of care	ICD-9-CM	Diagnosis
665.91	Unspecified obstetrical trauma, with delivery	ICD-9-CM	Diagnosis
665.92	Unspecified obstetrical trauma, delivered, with postpartum complication	ICD-9-CM	Diagnosis
665.93	Unspecified obstetrical trauma, antepartum	ICD-9-CM	Diagnosis
665.94	Unspecified obstetrical trauma, postpartum condition or complication	ICD-9-CM	Diagnosis
666	Postpartum hemorrhage	ICD-9-CM	Diagnosis
666.0	Third-stage postpartum hemorrhage	ICD-9-CM	Diagnosis
666.00	Third-stage postpartum hemorrhage, unspecified as to episode of care	ICD-9-CM	Diagnosis
666.02	Third-stage postpartum hemorrhage, with delivery	ICD-9-CM	Diagnosis
666.04	Third-stage postpartum hemorrhage, postpartum condition or complication	ICD-9-CM	Diagnosis
666.1	Other immediate postpartum hemorrhage	ICD-9-CM	Diagnosis
666.10	Other immediate postpartum hemorrhage, unspecified as to episode of care	ICD-9-CM	Diagnosis
666.12	Other immediate postpartum hemorrhage, with delivery	ICD-9-CM	Diagnosis
666.14	Other immediate postpartum hemorrhage, postpartum condition or complication	ICD-9-CM	Diagnosis
666.2	Delayed and secondary postpartum hemorrhage	ICD-9-CM	Diagnosis
666.20	Delayed and secondary postpartum hemorrhage, unspecified as to episode of care	ICD-9-CM	Diagnosis
666.22	Delayed and secondary postpartum hemorrhage, with delivery	ICD-9-CM	Diagnosis
666.24	Delayed and secondary postpartum hemorrhage, postpartum condition or complication	ICD-9-CM	Diagnosis
666.3	Postpartum coagulation defects	ICD-9-CM	Diagnosis
666.30	Postpartum coagulation defects, unspecified as to episode of care	ICD-9-CM	Diagnosis
666.32	Postpartum coagulation defects, with delivery	ICD-9-CM	Diagnosis
666.34	Postpartum coagulation defects, postpartum condition or complication	ICD-9-CM	Diagnosis
667	Retained placenta or membranes, without hemorrhage	ICD-9-CM	Diagnosis
667.0	Retained placenta without hemorrhage	ICD-9-CM	Diagnosis
667.00	Retained placenta without hemorrhage, unspecified as to episode of care	ICD-9-CM	Diagnosis
667.02	Retained placenta without hemorrhage, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
667.04	Retained placenta without hemorrhage, postpartum condition or complication	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
667.1	Retained portions of placenta or membranes, without hemorrhage	ICD-9-CM	Diagnosis
667.10	Retained portions of placenta or membranes, without hemorrhage, unspecified as to episode of care	ICD-9-CM	Diagnosis
667.12	Retained portions of placenta or membranes, without hemorrhage, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
667.14	Retained portions of placenta or membranes, without hemorrhage, postpartum condition or complication	ICD-9-CM	Diagnosis
668	Complications of the administration of anesthetic or other sedation in labor and delivery	ICD-9-CM	Diagnosis
668.0	Pulmonary complications of the administration of anesthesia or other sedation in labor and delivery	ICD-9-CM	Diagnosis
668.00	Pulmonary complications of the administration of anesthesia or other sedation in labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
668.01	Pulmonary complications of the administration of anesthesia or other sedation in labor and delivery, delivered	ICD-9-CM	Diagnosis
668.02	Pulmonary complications of the administration of anesthesia or other sedation in labor and delivery, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
668.03	Pulmonary complications of the administration of anesthesia or other sedation in labor and delivery, antepartum	ICD-9-CM	Diagnosis
668.04	Pulmonary complications of the administration of anesthesia or other sedation in labor and delivery, postpartum condition or complication	ICD-9-CM	Diagnosis
668.1	Cardiac complications of the administration of anesthesia or other sedation in labor and delivery	ICD-9-CM	Diagnosis
668.10	Cardiac complications of the administration of anesthesia or other sedation in labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
668.11	Cardiac complications of the administration of anesthesia or other sedation in labor and delivery, delivered	ICD-9-CM	Diagnosis
668.12	Cardiac complications of the administration of anesthesia or other sedation in labor and delivery, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
668.13	Cardiac complications of the administration of anesthesia or other sedation in labor and delivery, antepartum	ICD-9-CM	Diagnosis
668.14	Cardiac complications of the administration of anesthesia or other sedation in labor and delivery, postpartum condition or complication	ICD-9-CM	Diagnosis
668.2	Central nervous system complications of the administration of anesthesia or other sedation in labor and delivery	ICD-9-CM	Diagnosis
668.20	Central nervous system complications of the administration of anesthesia or other sedation in labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
668.21	Central nervous system complications of the administration of anesthesia or other sedation in labor and delivery, delivered	ICD-9-CM	Diagnosis
668.22	Central nervous system complications of the administration of anesthesia or other sedation in labor and delivery, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
668.23	Central nervous system complications of the administration of anesthesia or other sedation in labor and delivery, antepartum	ICD-9-CM	Diagnosis
668.24	Central nervous system complications of the administration of anesthesia or other sedation in labor and delivery, postpartum condition or complication	ICD-9-CM	Diagnosis
668.8	Other complications of the administration of anesthesia or other sedation in labor and delivery	ICD-9-CM	Diagnosis
668.80	Other complications of the administration of anesthesia or other sedation in labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
668.81	Other complications of the administration of anesthesia or other sedation in labor and delivery, delivered	ICD-9-CM	Diagnosis
668.82	Other complications of the administration of anesthesia or other sedation in labor and delivery, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
668.83	Other complications of the administration of anesthesia or other sedation in labor and delivery, antepartum	ICD-9-CM	Diagnosis
668.84	Other complications of the administration of anesthesia or other sedation in labor and delivery, postpartum condition or complication	ICD-9-CM	Diagnosis
668.9	Unspecified complication of the administration of anesthesia or other sedation in labor and delivery	ICD-9-CM	Diagnosis
668.90	Unspecified complication of the administration of anesthesia or other sedation in labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
668.91	Unspecified complication of the administration of anesthesia or other sedation in labor and delivery, delivered	ICD-9-CM	Diagnosis
668.92	Unspecified complication of the administration of anesthesia or other sedation in labor and delivery, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
668.93	Unspecified complication of the administration of anesthesia or other sedation in labor and delivery, antepartum	ICD-9-CM	Diagnosis
668.94	Unspecified complication of the administration of anesthesia or other sedation in labor and delivery, postpartum condition or complication	ICD-9-CM	Diagnosis
669	Other complications of labor and delivery, not elsewhere classified	ICD-9-CM	Diagnosis
669.0	Maternal distress	ICD-9-CM	Diagnosis
669.00	Maternal distress complicating labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
669.01	Maternal distress, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
669.02	Maternal distress, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
669.03	Maternal distress complicating labor and delivery, antepartum condition or complication	ICD-9-CM	Diagnosis
669.04	Maternal distress complicating labor and delivery, postpartum condition or complication	ICD-9-CM	Diagnosis
669.1	Shock during or following labor and delivery	ICD-9-CM	Diagnosis
669.10	Shock during or following labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
669.11	Shock during or following labor and delivery, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
669.12	Shock during or following labor and delivery, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
669.13	Shock during or following labor and delivery, antepartum shock	ICD-9-CM	Diagnosis
669.14	Shock during or following labor and delivery, postpartum condition or complication	ICD-9-CM	Diagnosis
669.2	Maternal hypotension syndrome	ICD-9-CM	Diagnosis
669.20	Maternal hypotension syndrome complicating labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
669.21	Maternal hypotension syndrome, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
669.22	Maternal hypotension syndrome, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
669.23	Maternal hypotension syndrome, antepartum	ICD-9-CM	Diagnosis
669.24	Maternal hypotension syndrome, postpartum condition or complication	ICD-9-CM	Diagnosis
669.3	Acute kidney failure following labor and delivery	ICD-9-CM	Diagnosis
669.30	Acute kidney failure following labor and delivery, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
669.32	Acute kidney failure following labor and delivery, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
669.34	Acute kidney failure following labor and delivery, postpartum condition or complication	ICD-9-CM	Diagnosis
669.4	Other complications of obstetrical surgery and procedures	ICD-9-CM	Diagnosis
669.40	Other complications of obstetrical surgery and procedures, unspecified as to episode of care	ICD-9-CM	Diagnosis
669.41	Other complications of obstetrical surgery and procedures, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
669.42	Other complications of obstetrical surgery and procedures, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
669.43	Other complications of obstetrical surgery and procedures, antepartum condition or complication	ICD-9-CM	Diagnosis
669.44	Other complications of obstetrical surgery and procedures, postpartum condition or complication	ICD-9-CM	Diagnosis
669.5	Forceps or vacuum extractor delivery without mention of indication	ICD-9-CM	Diagnosis
669.50	Forceps or vacuum extractor delivery without mention of indication, unspecified as to episode of care	ICD-9-CM	Diagnosis
669.51	Forceps or vacuum extractor delivery without mention of indication, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
669.6	Breech extraction, without mention of indication	ICD-9-CM	Diagnosis
669.60	Breech extraction, without mention of indication, unspecified as to episode of care	ICD-9-CM	Diagnosis
669.61	Breech extraction, without mention of indication, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
669.7	Cesarean delivery, without mention of indication	ICD-9-CM	Diagnosis
669.70	Cesarean delivery, without mention of indication, unspecified as to episode of care	ICD-9-CM	Diagnosis
669.71	Cesarean delivery, without mention of indication, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
669.8	Other complications of labor and delivery	ICD-9-CM	Diagnosis
669.80	Other complication of labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
669.81	Other complication of labor and delivery, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
669.82	Other complication of labor and delivery, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
669.83	Other complication of labor and delivery, antepartum condition or complication	ICD-9-CM	Diagnosis
669.84	Other complication of labor and delivery, postpartum condition or complication	ICD-9-CM	Diagnosis
669.9	Unspecified complication of labor and delivery	ICD-9-CM	Diagnosis
669.90	Unspecified complication of labor and delivery, unspecified as to episode of care	ICD-9-CM	Diagnosis
669.91	Unspecified complication of labor and delivery, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
669.92	Unspecified complication of labor and delivery, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
669.93	Unspecified complication of labor and delivery, antepartum condition or complication	ICD-9-CM	Diagnosis
669.94	Unspecified complication of labor and delivery, postpartum condition or complication	ICD-9-CM	Diagnosis
670	Major puerperal infection	ICD-9-CM	Diagnosis
670.0	Major puerperal infection, unspecified	ICD-9-CM	Diagnosis
670.00	Major puerperal infection, unspecified, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
670.02	Major puerperal infection, unspecified, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
670.04	Major puerperal infection, unspecified, postpartum condition or complication	ICD-9-CM	Diagnosis
670.1	Puerperal endometritis	ICD-9-CM	Diagnosis
670.10	Puerperal endometritis, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
670.12	Puerperal endometritis, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
670.14	Puerperal endometritis, postpartum condition or complication	ICD-9-CM	Diagnosis
670.2	Puerperal sepsis	ICD-9-CM	Diagnosis
670.20	Puerperal sepsis, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
670.22	Puerperal sepsis, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
670.24	Puerperal sepsis, postpartum condition or complication	ICD-9-CM	Diagnosis
670.3	Puerperal septic thrombophlebitis	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
670.30	Puerperal septic thrombophlebitis, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
670.32	Puerperal septic thrombophlebitis, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
670.34	Puerperal septic thrombophlebitis, postpartum condition or complication	ICD-9-CM	Diagnosis
670.8	Other major puerperal infection	ICD-9-CM	Diagnosis
670.80	Other major puerperal infection, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
670.82	Other major puerperal infection, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
670.84	Other major puerperal infection, postpartum condition or complication	ICD-9-CM	Diagnosis
671	Venous complications in pregnancy and the puerperium	ICD-9-CM	Diagnosis
671.0	Varicose veins of legs in pregnancy and the puerperium	ICD-9-CM	Diagnosis
671.00	Varicose veins of legs complicating pregnancy and the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
671.01	Varicose veins of legs, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
671.02	Varicose veins of legs, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
671.03	Varicose veins of legs, antepartum	ICD-9-CM	Diagnosis
671.04	Varicose veins of legs, postpartum condition or complication	ICD-9-CM	Diagnosis
671.1	Varicose veins of vulva and perineum in pregnancy and the puerperium	ICD-9-CM	Diagnosis
671.10	Varicose veins of vulva and perineum complicating pregnancy and the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
671.11	Varicose veins of vulva and perineum, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
671.12	Varicose veins of vulva and perineum, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
671.13	Varicose veins of vulva and perineum, antepartum	ICD-9-CM	Diagnosis
671.14	Varicose veins of vulva and perineum, postpartum condition or complication	ICD-9-CM	Diagnosis
671.2	Superficial thrombophlebitis in pregnancy and the puerperium	ICD-9-CM	Diagnosis
671.20	Superficial thrombophlebitis complicating pregnancy and the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
671.21	Superficial thrombophlebitis with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
671.22	Superficial thrombophlebitis with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
671.23	Superficial thrombophlebitis, antepartum	ICD-9-CM	Diagnosis
671.24	Superficial thrombophlebitis, postpartum condition or complication	ICD-9-CM	Diagnosis
671.3	Deep phlebothrombosis, antepartum	ICD-9-CM	Diagnosis
671.30	Deep phlebothrombosis, antepartum, unspecified as to episode of care	ICD-9-CM	Diagnosis
671.31	Deep phlebothrombosis, antepartum, with delivery	ICD-9-CM	Diagnosis
671.33	Deep phlebothrombosis, antepartum	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
671.4	Deep phlebothrombosis, postpartum	ICD-9-CM	Diagnosis
671.40	Deep phlebothrombosis, postpartum, unspecified as to episode of care	ICD-9-CM	Diagnosis
671.42	Deep phlebothrombosis, postpartum, with delivery	ICD-9-CM	Diagnosis
671.44	Deep phlebothrombosis, postpartum condition or complication	ICD-9-CM	Diagnosis
671.5	Other phlebitis and thrombosis in pregnancy and the puerperium	ICD-9-CM	Diagnosis
671.50	Other phlebitis and thrombosis complicating pregnancy and the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
671.51	Other phlebitis and thrombosis with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
671.52	Other phlebitis and thrombosis with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
671.53	Other antepartum phlebitis and thrombosis	ICD-9-CM	Diagnosis
671.54	Other phlebitis and thrombosis, postpartum condition or complication	ICD-9-CM	Diagnosis
671.8	Other venous complications in pregnancy and the puerperium	ICD-9-CM	Diagnosis
671.80	Other venous complication of pregnancy and the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
671.81	Other venous complication, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
671.82	Other venous complication, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
671.83	Other venous complication, antepartum	ICD-9-CM	Diagnosis
671.84	Other venous complications, postpartum condition or complication	ICD-9-CM	Diagnosis
671.9	Unspecified venous complication in pregnancy and the puerperium	ICD-9-CM	Diagnosis
671.90	Unspecified venous complication of pregnancy and the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
671.91	Unspecified venous complication, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
671.92	Unspecified venous complication, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
671.93	Unspecified venous complication, antepartum	ICD-9-CM	Diagnosis
671.94	Unspecified venous complication, postpartum condition or complication	ICD-9-CM	Diagnosis
672	Pyrexia of unknown origin during the puerperium	ICD-9-CM	Diagnosis
672.0	Pyrexia of unknown origin during the puerperium	ICD-9-CM	Diagnosis
672.00	Puerperal pyrexia of unknown origin, unspecified as to episode of care	ICD-9-CM	Diagnosis
672.02	Puerperal pyrexia of unknown origin, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
672.04	Puerperal pyrexia of unknown origin, postpartum condition or complication	ICD-9-CM	Diagnosis
673	Obstetrical pulmonary embolism	ICD-9-CM	Diagnosis
673.0	Obstetrical air embolism	ICD-9-CM	Diagnosis
673.00	Obstetrical air embolism, unspecified as to episode of care	ICD-9-CM	Diagnosis
673.01	Obstetrical air embolism, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
673.02	Obstetrical air embolism, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
673.03	Obstetrical air embolism, antepartum condition or complication	ICD-9-CM	Diagnosis
673.04	Obstetrical air embolism, postpartum condition or complication	ICD-9-CM	Diagnosis
673.1	Amniotic fluid embolism	ICD-9-CM	Diagnosis
673.10	Amniotic fluid embolism, unspecified as to episode of care	ICD-9-CM	Diagnosis
673.11	Amniotic fluid embolism, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
673.12	Amniotic fluid embolism, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
673.13	Amniotic fluid embolism, antepartum condition or complication	ICD-9-CM	Diagnosis
673.14	Amniotic fluid embolism, postpartum condition or complication	ICD-9-CM	Diagnosis
673.2	Obstetrical blood-clot embolism	ICD-9-CM	Diagnosis
673.20	Obstetrical blood-clot embolism, unspecified as to episode of care	ICD-9-CM	Diagnosis
673.21	Obstetrical blood-clot embolism, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
673.22	Obstetrical blood-clot embolism, with mention of postpartum complication	ICD-9-CM	Diagnosis
673.23	Obstetrical blood-clot embolism, antepartum	ICD-9-CM	Diagnosis
673.24	Obstetrical blood-clot embolism, postpartum condition or complication	ICD-9-CM	Diagnosis
673.3	Obstetrical pyemic and septic embolism	ICD-9-CM	Diagnosis
673.30	Obstetrical pyemic and septic embolism, unspecified as to episode of care	ICD-9-CM	Diagnosis
673.31	Obstetrical pyemic and septic embolism, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
673.32	Obstetrical pyemic and septic embolism, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
673.33	Obstetrical pyemic and septic embolism, antepartum	ICD-9-CM	Diagnosis
673.34	Obstetrical pyemic and septic embolism, postpartum condition or complication	ICD-9-CM	Diagnosis
673.8	Other obstetrical pulmonary embolism	ICD-9-CM	Diagnosis
673.80	Other obstetrical pulmonary embolism, unspecified as to episode of care	ICD-9-CM	Diagnosis
673.81	Other obstetrical pulmonary embolism, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
673.82	Other obstetrical pulmonary embolism, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
673.83	Other obstetrical pulmonary embolism, antepartum	ICD-9-CM	Diagnosis
673.84	Other obstetrical pulmonary embolism, postpartum condition or complication	ICD-9-CM	Diagnosis
674	Other and unspecified complications of the puerperium, not elsewhere classified	ICD-9-CM	Diagnosis
674.0	Cerebrovascular disorders in the puerperium	ICD-9-CM	Diagnosis
674.00	Cerebrovascular disorder occurring in pregnancy, childbirth, or the puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
674.01	Cerebrovascular disorder, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
674.02	Cerebrovascular disorder, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
674.03	Cerebrovascular disorder, antepartum	ICD-9-CM	Diagnosis
674.04	Cerebrovascular disorders in the puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
674.1	Disruption of cesarean wound	ICD-9-CM	Diagnosis
674.10	Disruption of cesarean wound, unspecified as to episode of care	ICD-9-CM	Diagnosis
674.12	Disruption of cesarean wound, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
674.14	Disruption of cesarean wound, postpartum condition or complication	ICD-9-CM	Diagnosis
674.2	Disruption of obstetrical perineal wound	ICD-9-CM	Diagnosis
674.20	Disruption of perineal wound, unspecified as to episode of care in pregnancy	ICD-9-CM	Diagnosis
674.22	Disruption of perineal wound, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
674.24	Disruption of perineal wound, postpartum condition or complication	ICD-9-CM	Diagnosis
674.3	Other complications of obstetrical surgical wounds	ICD-9-CM	Diagnosis
674.30	Other complication of obstetrical surgical wounds, unspecified as to episode of care	ICD-9-CM	Diagnosis
674.32	Other complication of obstetrical surgical wounds, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
674.34	Other complications of obstetrical surgical wounds, postpartum condition or complication	ICD-9-CM	Diagnosis
674.4	Placental polyp	ICD-9-CM	Diagnosis
674.40	Placental polyp, unspecified as to episode of care	ICD-9-CM	Diagnosis
674.42	Placental polyp, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
674.44	Placental polyp, postpartum condition or complication	ICD-9-CM	Diagnosis
674.5	Peripartum cardiomyopathy	ICD-9-CM	Diagnosis
674.50	Peripartum cardiomyopathy, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
674.51	Peripartum cardiomyopathy, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
674.52	Peripartum cardiomyopathy, delivered, with mention of postpartum condition	ICD-9-CM	Diagnosis
674.53	Peripartum cardiomyopathy, antepartum condition or complication	ICD-9-CM	Diagnosis
674.54	Peripartum cardiomyopathy, postpartum condition or complication	ICD-9-CM	Diagnosis
674.8	Other complications of the puerperium	ICD-9-CM	Diagnosis
674.80	Other complication of puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
674.82	Other complication of puerperium, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
674.84	Other complications of puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis
674.9	Unspecified complications of the puerperium	ICD-9-CM	Diagnosis
674.90	Unspecified complications of puerperium, unspecified as to episode of care	ICD-9-CM	Diagnosis
674.92	Unspecified complications of puerperium, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
674.94	Unspecified complications of puerperium, postpartum condition or complication	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
675	Infection of the breast and nipple associated with childbirth	ICD-9-CM	Diagnosis
675.0	Infection of nipple associated with childbirth	ICD-9-CM	Diagnosis
675.00	Infection of nipple associated with childbirth, unspecified as to episode of care	ICD-9-CM	Diagnosis
675.01	Infection of nipple associated with childbirth, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
675.02	Infection of nipple associated with childbirth, delivered with mention of postpartum complication	ICD-9-CM	Diagnosis
675.03	Infection of nipple, antepartum	ICD-9-CM	Diagnosis
675.04	Infection of nipple, postpartum condition or complication	ICD-9-CM	Diagnosis
675.1	Abscess of breast associated with childbirth	ICD-9-CM	Diagnosis
675.10	Abscess of breast associated with childbirth, unspecified as to episode of care	ICD-9-CM	Diagnosis
675.11	Abscess of breast associated with childbirth, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
675.12	Abscess of breast associated with childbirth, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
675.13	Abscess of breast, antepartum	ICD-9-CM	Diagnosis
675.14	Abscess of breast, postpartum condition or complication	ICD-9-CM	Diagnosis
675.2	Nonpurulent mastitis associated with childbirth	ICD-9-CM	Diagnosis
675.20	Nonpurulent mastitis, unspecified as to episode of prenatal or postnatal care	ICD-9-CM	Diagnosis
675.21	Nonpurulent mastitis, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
675.22	Nonpurulent mastitis, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
675.23	Nonpurulent mastitis, antepartum	ICD-9-CM	Diagnosis
675.24	Nonpurulent mastitis, postpartum condition or complication	ICD-9-CM	Diagnosis
675.8	Other specified infection of the breast and nipple associated with childbirth	ICD-9-CM	Diagnosis
675.80	Other specified infection of the breast and nipple associated with childbirth, unspecified as to episode of care	ICD-9-CM	Diagnosis
675.81	Other specified infection of the breast and nipple associated with childbirth, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
675.82	Other specified infection of the breast and nipple associated with childbirth, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
675.83	Other specified infection of the breast and nipple, antepartum	ICD-9-CM	Diagnosis
675.84	Other specified infections of the breast and nipple, postpartum condition or complication	ICD-9-CM	Diagnosis
675.9	Unspecified infection of the breast and nipple associated with childbirth	ICD-9-CM	Diagnosis
675.90	Unspecified infection of the breast and nipple, unspecified as to prenatal or postnatal episode of care	ICD-9-CM	Diagnosis
675.91	Unspecified infection of the breast and nipple, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
675.92	Unspecified infection of the breast and nipple, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
675.93	Unspecified infection of the breast and nipple, antepartum	ICD-9-CM	Diagnosis
675.94	Unspecified infection of the breast and nipple, postpartum condition or complication	ICD-9-CM	Diagnosis
676	Other disorders of the breast associated with childbirth and disorders of lactation	ICD-9-CM	Diagnosis
676.0	Retracted nipple associated with childbirth	ICD-9-CM	Diagnosis
676.00	Retracted nipple, unspecified as to prenatal or postnatal episode of care	ICD-9-CM	Diagnosis
676.01	Retracted nipple, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
676.02	Retracted nipple, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
676.03	Retracted nipple, antepartum condition or complication	ICD-9-CM	Diagnosis
676.04	Retracted nipple, postpartum condition or complication	ICD-9-CM	Diagnosis
676.1	Cracked nipple associated with childbirth	ICD-9-CM	Diagnosis
676.10	Cracked nipple, unspecified as to prenatal or postnatal episode of care	ICD-9-CM	Diagnosis
676.11	Cracked nipple, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
676.12	Cracked nipple, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
676.13	Cracked nipple, antepartum condition or complication	ICD-9-CM	Diagnosis
676.14	Cracked nipple, postpartum condition or complication	ICD-9-CM	Diagnosis
676.2	Engorgement of breasts associated with childbirth	ICD-9-CM	Diagnosis
676.20	Engorgement of breasts, unspecified as to prenatal or postnatal episode of care	ICD-9-CM	Diagnosis
676.21	Engorgement of breasts, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
676.22	Engorgement of breasts, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
676.23	Engorgement of breast, antepartum	ICD-9-CM	Diagnosis
676.24	Engorgement of breasts, postpartum condition or complication	ICD-9-CM	Diagnosis
676.3	Other and unspecified disorder of breast associated with childbirth	ICD-9-CM	Diagnosis
676.30	Other and unspecified disorder of breast associated with childbirth, unspecified as to episode of care	ICD-9-CM	Diagnosis
676.31	Other and unspecified disorder of breast associated with childbirth, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
676.32	Other and unspecified disorder of breast associated with childbirth, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
676.33	Other and unspecified disorder of breast associated with childbirth, antepartum condition or complication	ICD-9-CM	Diagnosis
676.34	Other and unspecified disorder of breast associated with childbirth, postpartum condition or complication	ICD-9-CM	Diagnosis
676.4	Failure of lactation	ICD-9-CM	Diagnosis
676.40	Failure of lactation, unspecified as to episode of care	ICD-9-CM	Diagnosis
676.41	Failure of lactation, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
676.42	Failure of lactation, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
676.43	Failure of lactation, antepartum condition or complication	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
676.44	Failure of lactation, postpartum condition or complication	ICD-9-CM	Diagnosis
676.5	Suppressed lactation	ICD-9-CM	Diagnosis
676.50	Suppressed lactation, unspecified as to episode of care	ICD-9-CM	Diagnosis
676.51	Suppressed lactation, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
676.52	Suppressed lactation, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
676.53	Suppressed lactation, antepartum condition or complication	ICD-9-CM	Diagnosis
676.54	Suppressed lactation, postpartum condition or complication	ICD-9-CM	Diagnosis
676.6	Galactorrhea	ICD-9-CM	Diagnosis
676.60	Galactorrhea associated with childbirth, unspecified as to episode of care	ICD-9-CM	Diagnosis
676.61	Galactorrhea, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
676.62	Galactorrhea, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
676.63	Galactorrhea, antepartum condition or complication	ICD-9-CM	Diagnosis
676.64	Galactorrhea, postpartum condition or complication	ICD-9-CM	Diagnosis
676.8	Other disorders of lactation	ICD-9-CM	Diagnosis
676.80	Other disorder of lactation, unspecified as to episode of care	ICD-9-CM	Diagnosis
676.81	Other disorder of lactation, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
676.82	Other disorder of lactation, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
676.83	Other disorder of lactation, antepartum condition or complication	ICD-9-CM	Diagnosis
676.84	Other disorders of lactation, postpartum condition or complication	ICD-9-CM	Diagnosis
676.9	Unspecified disorder of lactation	ICD-9-CM	Diagnosis
676.90	Unspecified disorder of lactation, unspecified as to episode of care	ICD-9-CM	Diagnosis
676.91	Unspecified disorder of lactation, with delivery, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
676.92	Unspecified disorder of lactation, with delivery, with mention of postpartum complication	ICD-9-CM	Diagnosis
676.93	Unspecified disorder of lactation, antepartum condition or complication	ICD-9-CM	Diagnosis
676.94	Unspecified disorder of lactation, postpartum condition or complication	ICD-9-CM	Diagnosis
677	Late effect of complication of pregnancy, childbirth, and the puerperium	ICD-9-CM	Diagnosis
678	Other fetal conditions	ICD-9-CM	Diagnosis
678.0	Fetal hematologic conditions	ICD-9-CM	Diagnosis
678.00	Fetal hematologic conditions, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
678.01	Fetal hematologic conditions, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
678.03	Fetal hematologic conditions, antepartum condition or complication	ICD-9-CM	Diagnosis
678.1	Fetal conjoined twins	ICD-9-CM	Diagnosis
678.10	Fetal conjoined twins, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
678.11	Fetal conjoined twins, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
678.13	Fetal conjoined twins, antepartum condition or complication	ICD-9-CM	Diagnosis
679	Complications of in utero procedures	ICD-9-CM	Diagnosis
679.0	Maternal complications from in utero procedure	ICD-9-CM	Diagnosis
679.00	Maternal complications from in utero procedure, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
679.01	Maternal complications from in utero procedure, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
679.02	Maternal complications from in utero procedure, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
679.03	Maternal complications from in utero procedure, antepartum condition or complication	ICD-9-CM	Diagnosis
679.04	Maternal complications from in utero procedure, postpartum condition or complication	ICD-9-CM	Diagnosis
679.1	Fetal complications from in utero procedure	ICD-9-CM	Diagnosis
679.10	Fetal complications from in utero procedure, unspecified as to episode of care or not applicable	ICD-9-CM	Diagnosis
679.11	Fetal complications from in utero procedure, delivered, with or without mention of antepartum condition	ICD-9-CM	Diagnosis
679.12	Fetal complications from in utero procedure, delivered, with mention of postpartum complication	ICD-9-CM	Diagnosis
679.13	Fetal complications from in utero procedure, antepartum condition or complication	ICD-9-CM	Diagnosis
679.14	Fetal complications from in utero procedure, postpartum condition or complication	ICD-9-CM	Diagnosis
V22	Normal pregnancy	ICD-9-CM	Diagnosis
V22.0	Supervision of normal first pregnancy	ICD-9-CM	Diagnosis
V22.1	Supervision of other normal pregnancy	ICD-9-CM	Diagnosis
V22.2	Pregnant state, incidental	ICD-9-CM	Diagnosis
V23	Supervision of high-risk pregnancy	ICD-9-CM	Diagnosis
V23.0	Pregnancy with history of infertility	ICD-9-CM	Diagnosis
V23.1	Pregnancy with history of trophoblastic disease	ICD-9-CM	Diagnosis
V23.2	Pregnancy with history of abortion	ICD-9-CM	Diagnosis
V23.3	Pregnancy with grand multiparity	ICD-9-CM	Diagnosis
V23.4	Pregnancy with other poor obstetric history	ICD-9-CM	Diagnosis
V23.41	Supervision of pregnancy with history of pre-term labor	ICD-9-CM	Diagnosis
V23.42	Pregnancy with history of ectopic pregnancy	ICD-9-CM	Diagnosis
V23.49	Supervision of pregnancy with other poor obstetric history	ICD-9-CM	Diagnosis
V23.5	Pregnancy with other poor reproductive history	ICD-9-CM	Diagnosis
V23.7	Insufficient prenatal care	ICD-9-CM	Diagnosis
V23.8	Supervision of other high-risk pregnancy	ICD-9-CM	Diagnosis
V23.81	Supervision of high-risk pregnancy of elderly primigravida	ICD-9-CM	Diagnosis
V23.82	Supervision of high-risk pregnancy of elderly multigravida	ICD-9-CM	Diagnosis
V23.83	Supervision of high-risk pregnancy of young primigravida	ICD-9-CM	Diagnosis
V23.84	Supervision of high-risk pregnancy of young multigravida	ICD-9-CM	Diagnosis

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
V23.85	Supervision of high risk pregnancy, pregnancy resulting from assisted reproductive technology	ICD-9-CM	Diagnosis
V23.86	Supervision of high risk pregnancy, pregnancy with history of in utero procedure during previous pregnancy	ICD-9-CM	Diagnosis
V23.87	Pregnancy with inconclusive fetal viability	ICD-9-CM	Diagnosis
V23.89	Supervision of other high-risk pregnancy	ICD-9-CM	Diagnosis
V23.9	Unspecified high-risk pregnancy	ICD-9-CM	Diagnosis
V28	Encounter for antenatal screening of mother	ICD-9-CM	Diagnosis
V28.0	Screening for chromosomal anomalies by amniocentesis	ICD-9-CM	Diagnosis
V28.1	Screening for raised alpha-fetoprotein levels in amniotic fluid	ICD-9-CM	Diagnosis
V28.2	Other antenatal screening based on amniocentesis	ICD-9-CM	Diagnosis
V28.3	Encounter for routine screening for malformation using ultrasonics	ICD-9-CM	Diagnosis
V28.4	Antenatal screening for fetal growth retardation using ultrasonics	ICD-9-CM	Diagnosis
V28.5	Antenatal screening for isoimmunization	ICD-9-CM	Diagnosis
V28.6	Screening of Streptococcus B	ICD-9-CM	Diagnosis
V28.8	Encounter for other specified antenatal screening	ICD-9-CM	Diagnosis
V28.81	Encounter for fetal anatomic survey	ICD-9-CM	Diagnosis
V28.82	Encounter for screening for risk of pre-term labor	ICD-9-CM	Diagnosis
V28.89	Other specified antenatal screening	ICD-9-CM	Diagnosis
V28.9	Unspecified antenatal screening	ICD-9-CM	Diagnosis

**Appendix D. List of Generic and Brand Names of Medical Products Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Generic Name</b>	<b>Brand Name</b>
<b>Short-Acting Insulins</b>	
insulin lispro	Humalog U-100 Insulin
insulin lispro	Humalog Kwikpen Insulin
insulin lispro	Humalog Junior Kwikpen U-100
insulin regular, human	Humulin R Regular U-100 Insulin
insulin regular, human	Humulin R U-500 (Conc) Insulin
insulin lispro	Humalog Pen
insulin regular, human	Humulin R U-500 (Conc) Kwikpen
insulin regular, human	Afrezza
insulin lispro	Admelog U-100 Insulin Lispro
insulin lispro	Admelog Solostar U-100 Insulin
insulin glulisine	Apidra U-100 Insulin
insulin glulisine	Apidra Solostar U-100 Insulin
insulin regular, human	Novolin R Regular U-100 Insulin
insulin regular, human	Novolin R Innolet
insulin aspart (niacinamide)	Fiasp U-100 Insulin
insulin aspart (niacinamide)	Fiasp Flextouch U-100 Insulin
insulin aspart	Novolog Penfill U-100 Insulin
insulin regular, human	Novolin R Penfill
insulin aspart	Novolog Flexpen U-100 Insulin
insulin aspart	Novolog U-100 Insulin Aspart
<b>Anti-Diabetes Medication (Except Short-Acting Insulins)</b>	
<b>Saxagliptin</b>	
saxagliptin hcl	Onglyza
saxagliptin hcl/metformin hcl	Kombiglyze XR
dapagliflozin propanediol/saxagliptin hcl	Qtern
<b>Sitagliptin</b>	
sitagliptin phosphate/metformin hcl	Janumet XR
sitagliptin phosphate	Januvia
sitagliptin phosphate/simvastatin	Juvisync
sitagliptin phosphate/metformin hcl	Janumet
ertugliflozin pidolate/sitagliptin phosphate	Steglujan
<b>Long-Acting Insulins</b>	
insulin glargine, human recombinant analog	Basaglar Kwikpen U-100 Insulin
insulin nph human isophane	Humulin N Nph U-100 Insulin
insulin nph human isophane	Humulin N Pen
insulin nph human isophane	Humulin N NPH Insulin Kwikpen
insulin glargine, human recombinant analog	Toujeo Solostar U-300 Insulin
insulin glargine, human recombinant analog	Lantus Solostar U-100 Insulin
insulin glargine, human recombinant analog	Lantus U-100 Insulin
insulin nph human isophane	Novolin N Nph U-100 Insulin
insulin nph human isophane	Novolin N Innolet
insulin degludec	Tresiba Flextouch U-200
insulin degludec	Tresiba Flextouch U-100

**Appendix D. List of Generic and Brand Names of Medical Products Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Generic Name</b>	<b>Brand Name</b>
insulin nph human isophane	Novolin N Penfill
insulin detemir	Levemir U-100 Insulin
insulin detemir	Levemir Flextouch U-100 Insulin
insulin detemir	Levemir Flexpen
insulin lispro protamine and insulin lispro	Humalog Mix 75-25(U-100)Insulin
insulin lispro protamine and insulin lispro	Humalog Mix 50-50 Insulin U-100
insulin nph human isophane/insulin regular, human	Humulin 70/30 U-100 Insulin
insulin nph human isophane/insulin regular, human	Humulin 70/30 Insulin Pen
insulin lispro protamine and insulin lispro	Humalog Mix 75-25 Kwikpen
insulin lispro protamine and insulin lispro	Humalog Mix 50-50 Kwikpen
insulin nph human isophane/insulin regular, human	Humulin 70/30 U-100 Kwikpen
insulin nph human isophane/insulin regular, human	Humulin 50/50
insulin nph human isophane/insulin regular, human	Novolin 70/30 U-100 Insulin
insulin nph human isophane/insulin regular, human	Novolin 70/30 Innolet Insulin
insulin nph human isophane/insulin regular, human	Novolin 70/30 Penfill
insulin aspart protamine human/insulin aspart	Novolog Mix 70-30 U-100 Insulin
insulin aspart protamine human/insulin aspart	Novolog Mix 70-30flexpen U-100
insulin glargine,human recombinant analog/lixisenatide	Soliqua 100/33
insulin degludec/liraglutide	Xultophy 100/3.6
<b>Pioglitazone</b>	
pioglitazone hcl	Pioglitazone
pioglitazone hcl/metformin hcl	Pioglitazone-Metformin
pioglitazone hcl/glimepiride	Pioglitazone-Glimepiride
pioglitazone hcl	Actos
pioglitazone hcl/metformin hcl	Actoplus MET
alogliptin benzoate/pioglitazone hcl	Alogliptin-Pioglitazone
alogliptin benzoate/pioglitazone hcl	Oseni
pioglitazone hcl/glimepiride	Duetact
pioglitazone hcl/metformin hcl	Actoplus Met Xr
<b>Second-Generation Sulfonylurea</b>	
rosiglitazone maleate/glimepiride	Avandaryl
glyburide	Micronase
glyburide,micronized	Glynase
glyburide	Diabeta
glimepiride	Amaryl
glipizide	Glucotrol XL
glipizide	Glucotrol
glyburide/metformin hcl	Glucovance
glipizide/metformin hcl	Metaglip
glyburide/metformin hcl	Glyburide-Metformin
glimepiride	Glimepiride
glipizide/metformin hcl	Glipizide-Metformin
glyburide,micronized	Glyburide Micronized
glyburide	Glyburide

**Appendix D. List of Generic and Brand Names of Medical Products Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Generic Name</b>	<b>Brand Name</b>
glipizide	Glipizide
pioglitazone hcl/glimepiride	Pioglitazone-Glimepiride
pioglitazone hcl/glimepiride	Duetact
<b>Alpha-Glucosidase Inhibitor</b>	
miglitol	Glyset
acarbose	Precose
acarbose	Acarbose
miglitol	Miglitol
<b>Amylin Analog-Type</b>	
pramlintide acetate	Symlinpen 60
pramlintide acetate	Symlinpen 120
pramlintide acetate	Symlin
<b>Biguanide</b>	
saxagliptin hcl/metformin hcl	Kombiglyze XR
sitagliptin phosphate/metformin hcl	Janumet XR
sitagliptin phosphate/metformin hcl	Janumet
rosiglitazone maleate/metformin hcl	Avandamet
metformin hcl	Glucophage
metformin hcl	Glucophage XR
glyburide/metformin hcl	Glucovance
glipizide/metformin hcl	Metaglip
metformin hcl	Metformin
pioglitazone hcl/metformin hcl	Pioglitazone-Metformin
glyburide/metformin hcl	Glyburide-Metformin
glipizide/metformin hcl	Glipizide-Metformin
repaglinide/metformin hcl	Prandimet
dapagliflozin propanediol/metformin hcl	Xigduo XR
linagliptin/metformin hcl	Jentadueto
empagliflozin/metformin hcl	Synjardy
linagliptin/metformin hcl	Jentadueto XR
empagliflozin/metformin hcl	Synjardy XR
metformin hcl	Riomet
metformin hcl	Glumetza
pioglitazone hcl/metformin hcl	Actoplus MET
alogliptin benzoate/metformin hcl	Alogliptin-Metformin
canagliflozin/metformin hcl	Invokamet
canagliflozin/metformin hcl	Invokamet XR
metformin hcl	Fortamet
pioglitazone hcl/metformin hcl	Actoplus Met Xr
alogliptin benzoate/metformin hcl	Kazano
repaglinide/metformin hcl	Repaglinide-Metformin
metformin/caffeine/amino acids 7/herbal comb 125/choline b	Appformin
metformin/amino acids no.7/herbal cmb.125/choline bitartrat	Appformin-D
metformin hcl/blood sugar diagnostic	Dm2

**Appendix D. List of Generic and Brand Names of Medical Products Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Generic Name</b>	<b>Brand Name</b>
<b>Other Dipeptidyl Peptidase-4 (Dpp-4) Inhibitor</b>	
linagliptin	Tradjenta
linagliptin/metformin hcl	Jentadueto
empagliflozin/linagliptin	Glyxambi
linagliptin/metformin hcl	Jentadueto XR
alogliptin benzoate	Alogliptin
alogliptin benzoate/metformin hcl	Alogliptin-Metformin
alogliptin benzoate	Nesina
alogliptin benzoate/metformin hcl	Kazano
alogliptin benzoate/pioglitazone hcl	Alogliptin-Pioglitazone
alogliptin benzoate/pioglitazone hcl	Oseni
<b>Glucagon-Like Peptide-1 (GLP-1) Analogue</b>	
dulaglutide	Trulicity
lixisenatide	Adlyxin
insulin glargine,human recombinant analog/lixisenatide	Soliqua 100/33
insulin degludec/liraglutide	Xultophy 100/3.6
liraglutide	Victoza 2-Pak
liraglutide	Victoza 3-Pak
semaglutide	Ozempic
albiglutide	Tanzeum
exenatide	Byetta
exenatide microspheres	Bydureon
exenatide microspheres	Bydureon Bcise
<b>Meglitinide</b>	
nateglinide	Starlix
repaglinide	Prandin
repaglinide/metformin hcl	Prandimet
repaglinide	Repaglinide
nateglinide	Nateglinide
<b>Sodium-Glucose Cotransporter-2 (Sglt-2) Inhibitor</b>	
dapagliflozin propanediol	Farxiga
ertugliflozin pidolate	Steglatro
ertugliflozin pidolate/sitagliptin phosphate	Steglujan
dapagliflozin propanediol/metformin hcl	Xigduo XR
dapagliflozin propanediol/saxagliptin hcl	Qtern
empagliflozin	Jardiance
empagliflozin/metformin hcl	Synjardy
empagliflozin/linagliptin	Glyxambi
empagliflozin/metformin hcl	Synjardy XR
canagliflozin	Invokana
canagliflozin/metformin hcl	Invokamet
canagliflozin/metformin hcl	Invokamet XR
<b>First-Generation Sulfonylurea</b>	
chlorpropamide	Chlorpropamide

**Appendix D. List of Generic and Brand Names of Medical Products Used to Define Inclusion and Exclusion Criteria in this Report**

<b>Generic Name</b>	<b>Brand Name</b>
tolbutamide	Tolbutamide
tolazamide	Tolazamide
Other Thiazolidinedione	
rosiglitazone maleate/glimepiride	Avandaryl
rosiglitazone maleate/metformin hcl	Avandamet
rosiglitazone maleate	Avandia

**Appendix E. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Outcome and Outcome Incidence Criteria in this Report**

Code	Description	Code Type	Code Category
<b>Acute Myocardial Infarction</b>			
410.00	Acute myocardial infarction of anterolateral wall, episode of care unspecified	ICD-9-CM	Diagnosis
410.01	Acute myocardial infarction of anterolateral wall, initial episode of care	ICD-9-CM	Diagnosis
410.10	Acute myocardial infarction of other anterior wall, episode of care unspecified	ICD-9-CM	Diagnosis
410.11	Acute myocardial infarction of other anterior wall, initial episode of care	ICD-9-CM	Diagnosis
410.20	Acute myocardial infarction of inferolateral wall, episode of care unspecified	ICD-9-CM	Diagnosis
410.21	Acute myocardial infarction of inferolateral wall, initial episode of care	ICD-9-CM	Diagnosis
410.30	Acute myocardial infarction of inferoposterior wall, episode of care unspecified	ICD-9-CM	Diagnosis
410.31	Acute myocardial infarction of inferoposterior wall, initial episode of care	ICD-9-CM	Diagnosis
410.40	Acute myocardial infarction of other inferior wall, episode of care unspecified	ICD-9-CM	Diagnosis
410.41	Acute myocardial infarction of other inferior wall, initial episode of care	ICD-9-CM	Diagnosis
410.50	Acute myocardial infarction of other lateral wall, episode of care unspecified	ICD-9-CM	Diagnosis
410.51	Acute myocardial infarction of other lateral wall, initial episode of care	ICD-9-CM	Diagnosis
410.60	Acute myocardial infarction, true posterior wall infarction, episode of care unspecified	ICD-9-CM	Diagnosis
410.61	Acute myocardial infarction, true posterior wall infarction, initial episode of care	ICD-9-CM	Diagnosis
410.70	Acute myocardial infarction, subendocardial infarction, episode of care unspecified	ICD-9-CM	Diagnosis
410.71	Acute myocardial infarction, subendocardial infarction, initial episode of care	ICD-9-CM	Diagnosis
410.80	Acute myocardial infarction of other specified sites, episode of care unspecified	ICD-9-CM	Diagnosis
410.81	Acute myocardial infarction of other specified sites, initial episode of care	ICD-9-CM	Diagnosis
410.90	Acute myocardial infarction, unspecified site, episode of care unspecified	ICD-9-CM	Diagnosis
410.91	Acute myocardial infarction, unspecified site, initial episode of care	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

Code	Description	Code Type	Code Category
<b>Cardiovascular Disease</b>			
<b>Prior Acute Myocardial Infarction (AMI)</b>			
410	Acute myocardial infarction	ICD-9-CM	Diagnosis
410.0	Acute myocardial infarction of anterolateral wall	ICD-9-CM	Diagnosis
410.00	Acute myocardial infarction of anterolateral wall, episode of care unspecified	ICD-9-CM	Diagnosis
410.01	Acute myocardial infarction of anterolateral wall, initial episode of care	ICD-9-CM	Diagnosis
410.02	Acute myocardial infarction of anterolateral wall, subsequent episode of care	ICD-9-CM	Diagnosis
410.1	Acute myocardial infarction of other anterior wall	ICD-9-CM	Diagnosis
410.10	Acute myocardial infarction of other anterior wall, episode of care unspecified	ICD-9-CM	Diagnosis
410.11	Acute myocardial infarction of other anterior wall, initial episode of care	ICD-9-CM	Diagnosis
410.12	Acute myocardial infarction of other anterior wall, subsequent episode of care	ICD-9-CM	Diagnosis
410.2	Acute myocardial infarction of inferolateral wall	ICD-9-CM	Diagnosis
410.20	Acute myocardial infarction of inferolateral wall, episode of care unspecified	ICD-9-CM	Diagnosis
410.21	Acute myocardial infarction of inferolateral wall, initial episode of care	ICD-9-CM	Diagnosis
410.22	Acute myocardial infarction of inferolateral wall, subsequent episode of care	ICD-9-CM	Diagnosis
410.3	Acute myocardial infarction of inferoposterior wall	ICD-9-CM	Diagnosis
410.30	Acute myocardial infarction of inferoposterior wall, episode of care unspecified	ICD-9-CM	Diagnosis
410.31	Acute myocardial infarction of inferoposterior wall, initial episode of care	ICD-9-CM	Diagnosis
410.32	Acute myocardial infarction of inferoposterior wall, subsequent episode of care	ICD-9-CM	Diagnosis
410.4	Acute myocardial infarction of other inferior wall	ICD-9-CM	Diagnosis
410.40	Acute myocardial infarction of other inferior wall, episode of care unspecified	ICD-9-CM	Diagnosis
410.41	Acute myocardial infarction of other inferior wall, initial episode of care	ICD-9-CM	Diagnosis
410.42	Acute myocardial infarction of other inferior wall, subsequent episode of care	ICD-9-CM	Diagnosis
410.5	Acute myocardial infarction of other lateral wall	ICD-9-CM	Diagnosis
410.50	Acute myocardial infarction of other lateral wall, episode of care unspecified	ICD-9-CM	Diagnosis
410.51	Acute myocardial infarction of other lateral wall, initial episode of care	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
410.52	Acute myocardial infarction of other lateral wall, subsequent episode of care	ICD-9-CM	Diagnosis
410.6	Acute myocardial infarction, true posterior wall infarction	ICD-9-CM	Diagnosis
410.60	Acute myocardial infarction, true posterior wall infarction, episode of care unspecified	ICD-9-CM	Diagnosis
410.61	Acute myocardial infarction, true posterior wall infarction, initial episode of care	ICD-9-CM	Diagnosis
410.62	Acute myocardial infarction, true posterior wall infarction, subsequent episode of care	ICD-9-CM	Diagnosis
410.7	Acute myocardial infarction, subendocardial infarction	ICD-9-CM	Diagnosis
410.70	Acute myocardial infarction, subendocardial infarction, episode of care unspecified	ICD-9-CM	Diagnosis
410.71	Acute myocardial infarction, subendocardial infarction, initial episode of care	ICD-9-CM	Diagnosis
410.72	Acute myocardial infarction, subendocardial infarction, subsequent episode of care	ICD-9-CM	Diagnosis
410.8	Acute myocardial infarction of other specified sites	ICD-9-CM	Diagnosis
410.80	Acute myocardial infarction of other specified sites, episode of care unspecified	ICD-9-CM	Diagnosis
410.81	Acute myocardial infarction of other specified sites, initial episode of care	ICD-9-CM	Diagnosis
410.82	Acute myocardial infarction of other specified sites, subsequent episode of care	ICD-9-CM	Diagnosis
410.9	Acute myocardial infarction, unspecified site	ICD-9-CM	Diagnosis
410.90	Acute myocardial infarction, unspecified site, episode of care unspecified	ICD-9-CM	Diagnosis
410.91	Acute myocardial infarction, unspecified site, initial episode of care	ICD-9-CM	Diagnosis
410.92	Acute myocardial infarction, unspecified site, subsequent episode of care	ICD-9-CM	Diagnosis
<b>Other Ischemic Heart Disease</b>			
411	Other acute and subacute forms of ischemic heart disease	ICD-9-CM	Diagnosis
411.0	Postmyocardial infarction syndrome	ICD-9-CM	Diagnosis
411.1	Intermediate coronary syndrome	ICD-9-CM	Diagnosis
411.8	Other acute and subacute forms of ischemic heart disease	ICD-9-CM	Diagnosis
411.81	Acute coronary occlusion without myocardial infarction	ICD-9-CM	Diagnosis
411.89	Other acute and subacute form of ischemic heart disease	ICD-9-CM	Diagnosis
412	Old myocardial infarction	ICD-9-CM	Diagnosis
413	Angina pectoris	ICD-9-CM	Diagnosis
413.0	Angina decubitus	ICD-9-CM	Diagnosis
413.1	Prinzmetal angina	ICD-9-CM	Diagnosis
413.9	Other and unspecified angina pectoris	ICD-9-CM	Diagnosis
414	Other forms of chronic ischemic heart disease	ICD-9-CM	Diagnosis
414.0	Coronary atherosclerosis	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
414.00	Coronary atherosclerosis of unspecified type of vessel, native or graft	ICD-9-CM	Diagnosis
414.01	Coronary atherosclerosis of native coronary artery	ICD-9-CM	Diagnosis
414.02	Coronary atherosclerosis of autologous vein bypass graft	ICD-9-CM	Diagnosis
414.03	Coronary atherosclerosis of nonautologous biological bypass graft	ICD-9-CM	Diagnosis
414.04	Coronary atherosclerosis of artery bypass graft	ICD-9-CM	Diagnosis
414.05	Coronary atherosclerosis of unspecified type of bypass graft	ICD-9-CM	Diagnosis
414.06	Coronary atherosclerosis, of native coronary artery of transplanted heart	ICD-9-CM	Diagnosis
414.07	Coronary atherosclerosis, of bypass graft (artery) (vein) of transplanted heart	ICD-9-CM	Diagnosis
414.1	Aneurysm and dissection of heart	ICD-9-CM	Diagnosis
414.10	Aneurysm of heart	ICD-9-CM	Diagnosis
414.11	Aneurysm of coronary vessels	ICD-9-CM	Diagnosis
414.12	Dissection of coronary artery	ICD-9-CM	Diagnosis
414.19	Other aneurysm of heart	ICD-9-CM	Diagnosis
414.2	Chronic total occlusion of coronary artery	ICD-9-CM	Diagnosis
414.3	Coronary atherosclerosis due to lipid rich plaque	ICD-9-CM	Diagnosis
414.4	Coronary atherosclerosis due to calcified coronary lesion	ICD-9-CM	Diagnosis
414.8	Other specified forms of chronic ischemic heart disease	ICD-9-CM	Diagnosis
414.9	Unspecified chronic ischemic heart disease	ICD-9-CM	Diagnosis
<b>Congestive Heart Failure</b>			
402.01	Malignant hypertensive heart disease with heart failure	ICD-9-CM	Diagnosis
402.11	Benign hypertensive heart disease with heart failure	ICD-9-CM	Diagnosis
402.91	Hypertensive heart disease, unspecified, with heart failure	ICD-9-CM	Diagnosis
404.01	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.03	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage V or end-stage renal disease	ICD-9-CM	Diagnosis
404.11	Hypertensive heart and chronic kidney disease, benign, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.13	Hypertensive heart and chronic kidney disease, benign, with heart failure and chronic kidney disease stage V or end-stage renal disease	ICD-9-CM	Diagnosis
404.91	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.93	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and chronic kidney disease stage V or end-stage renal disease	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
428	Heart failure	ICD-9-CM	Diagnosis
428.0	Congestive heart failure, unspecified	ICD-9-CM	Diagnosis
428.1	Left heart failure	ICD-9-CM	Diagnosis
428.2	Systolic heart failure	ICD-9-CM	Diagnosis
428.20	Unspecified systolic heart failure	ICD-9-CM	Diagnosis
428.21	Acute systolic heart failure	ICD-9-CM	Diagnosis
428.22	Chronic systolic heart failure	ICD-9-CM	Diagnosis
428.23	Acute on chronic systolic heart failure	ICD-9-CM	Diagnosis
428.3	Diastolic heart failure	ICD-9-CM	Diagnosis
428.30	Unspecified diastolic heart failure	ICD-9-CM	Diagnosis
428.31	Acute diastolic heart failure	ICD-9-CM	Diagnosis
428.32	Chronic diastolic heart failure	ICD-9-CM	Diagnosis
428.33	Acute on chronic diastolic heart failure	ICD-9-CM	Diagnosis
428.4	Combined systolic and diastolic heart failure	ICD-9-CM	Diagnosis
428.40	Unspecified combined systolic and diastolic heart failure	ICD-9-CM	Diagnosis
428.41	Acute combined systolic and diastolic heart failure	ICD-9-CM	Diagnosis
428.42	Chronic combined systolic and diastolic heart failure	ICD-9-CM	Diagnosis
428.43	Acute on chronic combined systolic and diastolic heart failure	ICD-9-CM	Diagnosis
428.9	Unspecified heart failure	ICD-9-CM	Diagnosis
<b>Other Heart Disease</b>			
402.00	Malignant hypertensive heart disease without heart failure	ICD-9-CM	Diagnosis
402.10	Benign hypertensive heart disease without heart failure	ICD-9-CM	Diagnosis
402.90	Unspecified hypertensive heart disease without heart failure	ICD-9-CM	Diagnosis
404.00	Hypertensive heart and chronic kidney disease, malignant, without heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.02	Hypertensive heart and chronic kidney disease, malignant, without heart failure and with chronic kidney disease stage V or end-stage renal disease	ICD-9-CM	Diagnosis
404.10	Hypertensive heart and chronic kidney disease, benign, without heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.12	Hypertensive heart and chronic kidney disease, benign, without heart failure and with chronic kidney disease stage V or end-stage renal disease	ICD-9-CM	Diagnosis
404.90	Hypertensive heart and chronic kidney disease, unspecified, without heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.92	Hypertensive heart and chronic kidney disease, unspecified, without heart failure and with chronic kidney disease stage V or end-stage renal disease	ICD-9-CM	Diagnosis
420	Acute pericarditis	ICD-9-CM	Diagnosis
420.0	Acute pericarditis in diseases classified elsewhere	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
420.9	Other and unspecified acute pericarditis	ICD-9-CM	Diagnosis
420.90	Unspecified acute pericarditis	ICD-9-CM	Diagnosis
420.91	Acute idiopathic pericarditis	ICD-9-CM	Diagnosis
420.99	Other acute pericarditis	ICD-9-CM	Diagnosis
421	Acute and subacute endocarditis	ICD-9-CM	Diagnosis
421.0	Acute and subacute bacterial endocarditis	ICD-9-CM	Diagnosis
421.1	Acute and subacute infective endocarditis in diseases classified elsewhere	ICD-9-CM	Diagnosis
421.9	Unspecified acute endocarditis	ICD-9-CM	Diagnosis
422	Acute myocarditis	ICD-9-CM	Diagnosis
422.0	Acute myocarditis in diseases classified elsewhere	ICD-9-CM	Diagnosis
422.9	Other and unspecified acute myocarditis	ICD-9-CM	Diagnosis
422.90	Unspecified acute myocarditis	ICD-9-CM	Diagnosis
422.91	Idiopathic myocarditis	ICD-9-CM	Diagnosis
422.92	Septic myocarditis	ICD-9-CM	Diagnosis
422.93	Toxic myocarditis	ICD-9-CM	Diagnosis
422.99	Other acute myocarditis	ICD-9-CM	Diagnosis
423	Other diseases of pericardium	ICD-9-CM	Diagnosis
423.0	Hemopericardium	ICD-9-CM	Diagnosis
423.1	Adhesive pericarditis	ICD-9-CM	Diagnosis
423.2	Constrictive pericarditis	ICD-9-CM	Diagnosis
423.3	Cardiac tamponade	ICD-9-CM	Diagnosis
423.8	Other specified diseases of pericardium	ICD-9-CM	Diagnosis
423.9	Unspecified disease of pericardium	ICD-9-CM	Diagnosis
424	Other diseases of endocardium	ICD-9-CM	Diagnosis
424.0	Mitral valve disorders	ICD-9-CM	Diagnosis
424.1	Aortic valve disorders	ICD-9-CM	Diagnosis
424.2	Tricuspid valve disorders, specified as nonrheumatic	ICD-9-CM	Diagnosis
424.3	Pulmonary valve disorders	ICD-9-CM	Diagnosis
424.9	Endocarditis, valve unspecified	ICD-9-CM	Diagnosis
424.90	Endocarditis, valve unspecified, unspecified cause	ICD-9-CM	Diagnosis
424.91	Endocarditis in diseases classified elsewhere	ICD-9-CM	Diagnosis
424.99	Other endocarditis, valve unspecified	ICD-9-CM	Diagnosis
425	Cardiomyopathy	ICD-9-CM	Diagnosis
425.0	Endomyocardial fibrosis	ICD-9-CM	Diagnosis
425.1	Hypertrophic cardiomyopathy	ICD-9-CM	Diagnosis
425.11	Hypertrophic obstructive cardiomyopathy	ICD-9-CM	Diagnosis
425.18	Other hypertrophic cardiomyopathy	ICD-9-CM	Diagnosis
425.2	Obscure cardiomyopathy of Africa	ICD-9-CM	Diagnosis
425.3	Endocardial fibroelastosis	ICD-9-CM	Diagnosis
425.4	Other primary cardiomyopathies	ICD-9-CM	Diagnosis
425.5	Alcoholic cardiomyopathy	ICD-9-CM	Diagnosis
425.7	Nutritional and metabolic cardiomyopathy	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
425.8	Cardiomyopathy in other diseases classified elsewhere	ICD-9-CM	Diagnosis
425.9	Unspecified secondary cardiomyopathy	ICD-9-CM	Diagnosis
426	Conduction disorders	ICD-9-CM	Diagnosis
426.0	Atrioventricular block, complete	ICD-9-CM	Diagnosis
426.1	Atrioventricular block, other and unspecified	ICD-9-CM	Diagnosis
426.10	Unspecified atrioventricular block	ICD-9-CM	Diagnosis
426.11	First degree atrioventricular block	ICD-9-CM	Diagnosis
426.12	Mobitz (type) II atrioventricular block	ICD-9-CM	Diagnosis
426.13	Other second degree atrioventricular block	ICD-9-CM	Diagnosis
426.2	Left bundle branch hemiblock	ICD-9-CM	Diagnosis
426.3	Other left bundle branch block	ICD-9-CM	Diagnosis
426.4	Right bundle branch block	ICD-9-CM	Diagnosis
426.5	Bundle branch block, other and unspecified	ICD-9-CM	Diagnosis
426.50	Unspecified bundle branch block	ICD-9-CM	Diagnosis
426.51	Right bundle branch block and left posterior fascicular block	ICD-9-CM	Diagnosis
426.52	Right bundle branch block and left anterior fascicular block	ICD-9-CM	Diagnosis
426.53	Other bilateral bundle branch block	ICD-9-CM	Diagnosis
426.54	Trifascicular block	ICD-9-CM	Diagnosis
426.6	Other heart block	ICD-9-CM	Diagnosis
426.7	Anomalous atrioventricular excitation	ICD-9-CM	Diagnosis
426.8	Other specified conduction disorders	ICD-9-CM	Diagnosis
426.81	Lown-Ganong-Levine syndrome	ICD-9-CM	Diagnosis
426.82	Long QT syndrome	ICD-9-CM	Diagnosis
426.89	Other specified conduction disorder	ICD-9-CM	Diagnosis
426.9	Unspecified conduction disorder	ICD-9-CM	Diagnosis
427	Cardiac dysrhythmias	ICD-9-CM	Diagnosis
427.0	Paroxysmal supraventricular tachycardia	ICD-9-CM	Diagnosis
427.1	Paroxysmal ventricular tachycardia	ICD-9-CM	Diagnosis
427.2	Unspecified paroxysmal tachycardia	ICD-9-CM	Diagnosis
427.3	Atrial fibrillation and flutter	ICD-9-CM	Diagnosis
427.31	Atrial fibrillation	ICD-9-CM	Diagnosis
427.32	Atrial flutter	ICD-9-CM	Diagnosis
427.4	Ventricular fibrillation and flutter	ICD-9-CM	Diagnosis
427.41	Ventricular fibrillation	ICD-9-CM	Diagnosis
427.42	Ventricular flutter	ICD-9-CM	Diagnosis
427.5	Cardiac arrest	ICD-9-CM	Diagnosis
427.6	Premature beats	ICD-9-CM	Diagnosis
427.60	Unspecified premature beats	ICD-9-CM	Diagnosis
427.61	Supraventricular premature beats	ICD-9-CM	Diagnosis
427.69	Other premature beats	ICD-9-CM	Diagnosis
427.8	Other specified cardiac dysrhythmias	ICD-9-CM	Diagnosis
427.81	Sinoatrial node dysfunction	ICD-9-CM	Diagnosis
427.89	Other specified cardiac dysrhythmias	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
427.9	Unspecified cardiac dysrhythmia	ICD-9-CM	Diagnosis
429	Ill-defined descriptions and complications of heart disease	ICD-9-CM	Diagnosis
429.0	Unspecified myocarditis	ICD-9-CM	Diagnosis
429.1	Myocardial degeneration	ICD-9-CM	Diagnosis
429.2	Unspecified cardiovascular disease	ICD-9-CM	Diagnosis
429.3	Cardiomegaly	ICD-9-CM	Diagnosis
429.4	Functional disturbances following cardiac surgery	ICD-9-CM	Diagnosis
429.5	Rupture of chordae tendineae	ICD-9-CM	Diagnosis
429.6	Rupture of papillary muscle	ICD-9-CM	Diagnosis
429.7	Certain sequelae of myocardial infarction, not elsewhere classified	ICD-9-CM	Diagnosis
429.71	Acquired cardiac septal defect	ICD-9-CM	Diagnosis
429.79	Other certain sequelae of myocardial infarction, not elsewhere classified	ICD-9-CM	Diagnosis
429.8	Other ill-defined heart diseases	ICD-9-CM	Diagnosis
429.81	Other disorders of papillary muscle	ICD-9-CM	Diagnosis
429.82	Hyperkinetic heart disease	ICD-9-CM	Diagnosis
429.83	Takotsubo syndrome	ICD-9-CM	Diagnosis
429.89	Other ill-defined heart disease	ICD-9-CM	Diagnosis
429.9	Unspecified heart disease	ICD-9-CM	Diagnosis
440	Atherosclerosis	ICD-9-CM	Diagnosis
440.0	Atherosclerosis of aorta	ICD-9-CM	Diagnosis
440.1	Atherosclerosis of renal artery	ICD-9-CM	Diagnosis
440.2	Atherosclerosis of native arteries of the extremities	ICD-9-CM	Diagnosis
440.20	Atherosclerosis of native arteries of the extremities, unspecified	ICD-9-CM	Diagnosis
440.21	Atherosclerosis of native arteries of the extremities with intermittent claudication	ICD-9-CM	Diagnosis
440.22	Atherosclerosis of native arteries of the extremities with rest pain	ICD-9-CM	Diagnosis
440.23	Atherosclerosis of native arteries of the extremities with ulceration	ICD-9-CM	Diagnosis
440.24	Atherosclerosis of native arteries of the extremities with gangrene	ICD-9-CM	Diagnosis
440.29	Other atherosclerosis of native arteries of the extremities	ICD-9-CM	Diagnosis
440.3	Atherosclerosis of bypass graft of extremities	ICD-9-CM	Diagnosis
440.30	Atherosclerosis of unspecified bypass graft of extremities	ICD-9-CM	Diagnosis
440.31	Atherosclerosis of autologous vein bypass graft of extremities	ICD-9-CM	Diagnosis
440.32	Atherosclerosis of nonautologous biological bypass graft of extremities	ICD-9-CM	Diagnosis
440.4	Chronic total occlusion of artery of the extremities	ICD-9-CM	Diagnosis
440.8	Atherosclerosis of other specified arteries	ICD-9-CM	Diagnosis
440.9	Generalized and unspecified atherosclerosis	ICD-9-CM	Diagnosis
<b>Stroke (Broad Definition)</b>			
430	Subarachnoid hemorrhage	ICD-9-CM	Diagnosis
431	Intracerebral hemorrhage	ICD-9-CM	Diagnosis
432	Other and unspecified intracranial hemorrhage	ICD-9-CM	Diagnosis
432.0	Nontraumatic extradural hemorrhage	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
432.1	Subdural hemorrhage	ICD-9-CM	Diagnosis
432.9	Unspecified intracranial hemorrhage	ICD-9-CM	Diagnosis
433	Occlusion and stenosis of precerebral arteries	ICD-9-CM	Diagnosis
433.0	Occlusion and stenosis of basilar artery	ICD-9-CM	Diagnosis
433.00	Occlusion and stenosis of basilar artery without mention of cerebral infarction	ICD-9-CM	Diagnosis
433.01	Occlusion and stenosis of basilar artery with cerebral infarction	ICD-9-CM	Diagnosis
433.1	Occlusion and stenosis of carotid artery	ICD-9-CM	Diagnosis
433.10	Occlusion and stenosis of carotid artery without mention of cerebral infarction	ICD-9-CM	Diagnosis
433.11	Occlusion and stenosis of carotid artery with cerebral infarction	ICD-9-CM	Diagnosis
433.2	Occlusion and stenosis of vertebral artery	ICD-9-CM	Diagnosis
433.20	Occlusion and stenosis of vertebral artery without mention of cerebral infarction	ICD-9-CM	Diagnosis
433.21	Occlusion and stenosis of vertebral artery with cerebral infarction	ICD-9-CM	Diagnosis
433.3	Occlusion and stenosis of multiple and bilateral precerebral arteries	ICD-9-CM	Diagnosis
433.30	Occlusion and stenosis of multiple and bilateral precerebral arteries without mention of cerebral infarction	ICD-9-CM	Diagnosis
433.31	Occlusion and stenosis of multiple and bilateral precerebral arteries with cerebral infarction	ICD-9-CM	Diagnosis
433.8	Occlusion and stenosis of other specified precerebral artery	ICD-9-CM	Diagnosis
433.80	Occlusion and stenosis of other specified precerebral artery without mention of cerebral infarction	ICD-9-CM	Diagnosis
433.81	Occlusion and stenosis of other specified precerebral artery with cerebral infarction	ICD-9-CM	Diagnosis
433.9	Occlusion and stenosis of unspecified precerebral artery	ICD-9-CM	Diagnosis
433.90	Occlusion and stenosis of unspecified precerebral artery without mention of cerebral infarction	ICD-9-CM	Diagnosis
433.91	Occlusion and stenosis of unspecified precerebral artery with cerebral infarction	ICD-9-CM	Diagnosis
434	Occlusion of cerebral arteries	ICD-9-CM	Diagnosis
434.0	Cerebral thrombosis	ICD-9-CM	Diagnosis
434.00	Cerebral thrombosis without mention of cerebral infarction	ICD-9-CM	Diagnosis
434.01	Cerebral thrombosis with cerebral infarction	ICD-9-CM	Diagnosis
434.1	Cerebral embolism	ICD-9-CM	Diagnosis
434.10	Cerebral embolism without mention of cerebral infarction	ICD-9-CM	Diagnosis
434.11	Cerebral embolism with cerebral infarction	ICD-9-CM	Diagnosis
434.9	Unspecified cerebral artery occlusion	ICD-9-CM	Diagnosis
434.90	Unspecified cerebral artery occlusion without mention of cerebral infarction	ICD-9-CM	Diagnosis
434.91	Unspecified cerebral artery occlusion with cerebral infarction	ICD-9-CM	Diagnosis
436	Acute, but ill-defined, cerebrovascular disease	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
<b>Stroke (Narrow Definition)</b>			
430	Subarachnoid hemorrhage	ICD-9-CM	Diagnosis
431	Intracerebral hemorrhage	ICD-9-CM	Diagnosis
433.01	Occlusion and stenosis of basilar artery with cerebral infarction	ICD-9-CM	Diagnosis
433.11	Occlusion and stenosis of carotid artery with cerebral infarction	ICD-9-CM	Diagnosis
433.21	Occlusion and stenosis of vertebral artery with cerebral infarction	ICD-9-CM	Diagnosis
433.31	Occlusion and stenosis of multiple and bilateral precerebral arteries with cerebral infarction	ICD-9-CM	Diagnosis
433.81	Occlusion and stenosis of other specified precerebral artery with cerebral infarction	ICD-9-CM	Diagnosis
433.91	Occlusion and stenosis of unspecified precerebral artery with cerebral infarction	ICD-9-CM	Diagnosis
434.01	Cerebral thrombosis with cerebral infarction	ICD-9-CM	Diagnosis
434.11	Cerebral embolism with cerebral infarction	ICD-9-CM	Diagnosis
434.91	Unspecified cerebral artery occlusion with cerebral infarction	ICD-9-CM	Diagnosis
436	Acute, but ill-defined, cerebrovascular disease	ICD-9-CM	Diagnosis
<b>Peripheral Arterial Disease</b>			
443.9	Unspecified peripheral vascular disease	ICD-9-CM	Diagnosis
<b>Coronary Revascularization Procedure</b>			
<b>Coronary Artery Bypass Graft</b>			
33510	Coronary artery bypass, vein only; single coronary venous graft	CPT-4	Procedure
33511	Coronary artery bypass, vein only; 2 coronary venous grafts	CPT-4	Procedure
33512	Coronary artery bypass, vein only; 3 coronary venous grafts	CPT-4	Procedure
33513	Coronary artery bypass, vein only; 4 coronary venous grafts	CPT-4	Procedure
33514	Coronary artery bypass, vein only; 5 coronary venous grafts	CPT-4	Procedure
33516	Coronary artery bypass, vein only; 6 or more coronary venous grafts	CPT-4	Procedure
33517	Coronary artery bypass, using venous graft(s) and arterial graft(s); single vein graft (List separately in addition to code for primary procedure)	CPT-4	Procedure
33518	Coronary artery bypass, using venous graft(s) and arterial graft(s); 2 venous grafts (List separately in addition to code for primary procedure)	CPT-4	Procedure
33519	Coronary artery bypass, using venous graft(s) and arterial graft(s); 3 venous grafts (List separately in addition to code for primary procedure)	CPT-4	Procedure
3351F	Negative screen for depressive symptoms as categorized by using a standardized depression screening/assessment tool (MDD)	CPT-2	Procedure
33520	Coronary Artery Bypass, Nonautogenous Graft (eg, Synthetic Or Cadaver); Single Graft	CPT-4	Procedure
33521	Coronary artery bypass, using venous graft(s) and arterial graft(s); 4 venous grafts (List separately in addition to code for primary procedure)	CPT-4	Procedure

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
33522	Coronary artery bypass, using venous graft(s) and arterial graft(s); 5 venous grafts (List separately in addition to code for primary procedure)	CPT-4	Procedure
33523	Coronary artery bypass, using venous graft(s) and arterial graft(s); 6 or more venous grafts (List separately in addition to code for primary procedure)	CPT-4	Procedure
33525	Coronary Artery Bypass, Nonautogenous Graft (eg, Synthetic Or Cadaver); Two Coronary Grafts	CPT-4	Procedure
33528	Coronary Artery Bypass, Nonautogenous Graft (eg, Synthetic Or Cadaver); Three Or More Coronary Grafts	CPT-4	Procedure
33530	Reoperation, coronary artery bypass procedure or valve procedure, more than 1 month after original operation (List separately in addition to code for primary procedure)	CPT-4	Procedure
33533	Coronary artery bypass, using arterial graft(s); single arterial graft	CPT-4	Procedure
33534	Coronary artery bypass, using arterial graft(s); 2 coronary arterial grafts	CPT-4	Procedure
33535	Coronary artery bypass, using arterial graft(s); 3 coronary arterial grafts	CPT-4	Procedure
33536	Coronary artery bypass, using arterial graft(s); 4 or more coronary arterial grafts	CPT-4	Procedure
33560	Myocardial Operation Combined With Coronary Bypass Procedure	CPT-4	Procedure
33570	CORONARY ANGIOPLASTY W/BYPASS	CPT-4	Procedure
33572	Coronary endarterectomy, open, any method, of left anterior descending, circumflex, or right coronary artery performed in conjunction with coronary artery bypass graft procedure, each vessel (List separately in addition to primary procedure)	CPT-4	Procedure
33575	CORON ANGIOPLSTY W/BYPASS; COMBO W/VASCULARIZAT	CPT-4	Procedure
35600	Harvest of upper extremity artery, 1 segment, for coronary artery bypass procedure (List separately in addition to code for primary procedure)	CPT-4	Procedure
36.10	Aortocoronary bypass for heart revascularization, not otherwise specified	ICD-9-CM	Procedure
36.11	(Aorto)coronary bypass of one coronary artery	ICD-9-CM	Procedure
36.12	(Aorto)coronary bypass of two coronary arteries	ICD-9-CM	Procedure
36.13	(Aorto)coronary bypass of three coronary arteries	ICD-9-CM	Procedure
36.14	(Aorto)coronary bypass of four or more coronary arteries	ICD-9-CM	Procedure
36.15	Single internal mammary-coronary artery bypass	ICD-9-CM	Procedure
36.16	Double internal mammary-coronary artery bypass	ICD-9-CM	Procedure
36.17	Abdominal-coronary artery bypass	ICD-9-CM	Procedure
36.19	Other bypass anastomosis for heart revascularization	ICD-9-CM	Procedure
36.2	Heart revascularization by arterial implant	ICD-9-CM	Procedure
996.03	Mechanical complication due to coronary bypass graft	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
S2205	Minimally invasive direct coronary artery bypass surgery involving mini-thoracotomy or mini-sternotomy surgery, performed under direct vision; using arterial graft(s), single coronary arterial graft	HCPCS	Procedure
S2206	Minimally invasive direct coronary artery bypass surgery involving mini-thoracotomy or mini-sternotomy surgery, performed under direct vision; using arterial graft(s), 2 coronary arterial grafts	HCPCS	Procedure
S2207	Minimally invasive direct coronary artery bypass surgery involving mini-thoracotomy or mini-sternotomy surgery, performed under direct vision; using venous graft only, single coronary venous graft	HCPCS	Procedure
S2208	Minimally invasive direct coronary artery bypass surgery involving mini-thoracotomy or mini-sternotomy surgery, performed under direct vision; using single arterial and venous graft(s), single venous graft	HCPCS	Procedure
S2209	Minimally invasive direct coronary artery bypass surgery involving mini-thoracotomy or mini-sternotomy surgery, performed under direct vision; using 2 arterial grafts and single venous graft	HCPCS	Procedure
V45.81	Postprocedural aortocoronary bypass status	ICD-9-CM	Diagnosis
<b>Percutaneous Coronary Intervention</b>			
00.66	Percutaneous transluminal coronary angioplasty [PTCA]	ICD-9-CM	Procedure
17.55	Transluminal coronary atherectomy	ICD-9-CM	Procedure
36.01	Single vessel percutaneous transluminal coronary angioplasty [PTCA] or coronary atherectomy without mention of thrombolytic agent	ICD-9-CM	Procedure
36.02	Single vessel percutaneous transluminal coronary angioplasty [PTCA] or coronary atherectomy with thrombolytic agent	ICD-9-CM	Procedure
36.03	Open chest coronary artery angioplasty	ICD-9-CM	Procedure
36.04	Intracoronary artery thrombolytic infusion	ICD-9-CM	Procedure
36.05	Multiple vessel (percutaneous) transluminal coronary angioplasty [PTCA] or coronary atherectomy performed during the same operation, with or without mention of thrombolytic agent	ICD-9-CM	Procedure
36.06	Insertion of non-drug-eluting coronary artery stent(s)	ICD-9-CM	Procedure
36.07	Insertion of drug-eluting coronary artery stent(s)	ICD-9-CM	Procedure
36.09	Other removal of coronary artery obstruction	ICD-9-CM	Procedure
37.22	Left heart cardiac catheterization	ICD-9-CM	Procedure
37.23	Combined right and left heart cardiac catheterization	ICD-9-CM	Procedure
88.50	Angiocardiology, not otherwise specified	ICD-9-CM	Procedure
88.51	Angiocardiology of venae cavae	ICD-9-CM	Procedure
88.52	Angiocardiology of right heart structures	ICD-9-CM	Procedure
88.53	Angiocardiology of left heart structures	ICD-9-CM	Procedure
88.54	Combined right and left heart angiocardiology	ICD-9-CM	Procedure
88.55	Coronary arteriography using single catheter	ICD-9-CM	Procedure
88.56	Coronary arteriography using two catheters	ICD-9-CM	Procedure
88.57	Other and unspecified coronary arteriography	ICD-9-CM	Procedure

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
88.58	Negative-contrast cardiac roentgenography	ICD-9-CM	Procedure
88.59	Intra-operative coronary fluorescence vascular angiography	ICD-9-CM	Procedure
92973	Percutaneous transluminal coronary thrombectomy mechanical (List separately in addition to code for primary procedure)	CPT-4	Procedure
92974	Transcatheter placement of radiation delivery device for subsequent coronary intravascular brachytherapy (List separately in addition to code for primary procedure)	CPT-4	Procedure
92977	Thrombolysis, coronary; by intravenous infusion	CPT-4	Procedure
92980	Transcatheter placement of an intracoronary stent(s), percutaneous, with or without other therapeutic intervention, any method; single vessel	CPT-4	Procedure
92981	Transcatheter placement of an intracoronary stent(s), percutaneous, with or without other therapeutic intervention, any method; each additional vessel (List separately in addition to code for primary procedure)	CPT-4	Procedure
92982	Percutaneous transluminal coronary balloon angioplasty; single vessel	CPT-4	Procedure
92984	Percutaneous transluminal coronary balloon angioplasty; each additional vessel (List separately in addition to code for primary procedure)	CPT-4	Procedure
92987	Percutaneous balloon valvuloplasty; mitral valve	CPT-4	Procedure
92995	Percutaneous transluminal coronary atherectomy, by mechanical or other method, with or without balloon angioplasty; single vessel	CPT-4	Procedure
92996	Percutaneous transluminal coronary atherectomy, by mechanical or other method, with or without balloon angioplasty; each additional vessel (List separately in addition to code for primary procedure)	CPT-4	Procedure
G0290	Transcatheter placement of a drug eluting intracoronary stent(s), percutaneous, with or without other therapeutic intervention, any method; single vessel	HCPCS	Procedure
G0291	Transcatheter placement of a drug eluting intracoronary stent(s), percutaneous, with or without other therapeutic intervention, any method; each additional vessel	HCPCS	Procedure
V45.82	Postprocedural percutaneous transluminal coronary angioplasty status	ICD-9-CM	Diagnosis
<b>Carotid Revascularization Procedure</b>			
<b>Carotid Endarterectomy, Stenting, Angioplasty or Atherectomy</b>			
00.61	Percutaneous angioplasty of extracranial vessel(s)	ICD-9-CM	Procedure
00.63	Percutaneous insertion of carotid artery stent(s)	ICD-9-CM	Procedure
0075T	Transcatheter placement of extracranial vertebral artery stent(s), including radiologic supervision and interpretation, open or percutaneous; initial vessel	CPT Category III	Procedure

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
0076T	Transcatheter placement of extracranial vertebral artery stent(s), including radiologic supervision and interpretation, open or percutaneous; each additional vessel (List separately in addition to code for primary procedure)	CPT Category III	Procedure
35301	Thromboendarterectomy, including patch graft, if performed; carotid, vertebral, subclavian, by neck incision	CPT-4	Procedure
35390	Reoperation, carotid, thromboendarterectomy, more than 1 month after original operation (List separately in addition to code for primary procedure)	CPT-4	Procedure
35501	Bypass graft, with vein; common carotid-ipsilateral internal carotid	CPT-4	Procedure
35601	Bypass graft, with other than vein; common carotid-ipsilateral internal carotid	CPT-4	Procedure
35901	Excision of infected graft; neck	CPT-4	Procedure
37215	Transcatheter placement of intravascular stent(s), cervical carotid artery, open or percutaneous, including angioplasty, when performed, and radiological supervision and interpretation; with distal embolic protection	CPT-4	Procedure
37216	Transcatheter placement of intravascular stent(s), cervical carotid artery, open or percutaneous, including angioplasty, when performed, and radiological supervision and interpretation; without distal embolic protection	CPT-4	Procedure
38.11	Endarterectomy of intracranial vessels	ICD-9-CM	Procedure
38.12	Endarterectomy of other vessels of head and neck	ICD-9-CM	Procedure
S2211	Transcatheter placement of intravascular stent(s), carotid artery, percutaneous, unilateral (if performed bilaterally, use-50 modifier)	HCPCS	Procedure
<b>Carotid Bypass</b>			
39.28	Extracranial-intracranial (EC-IC) vascular bypass	ICD-9-CM	Procedure
<b>Lower Extremity Revascularization Procedure</b>			
<b>Lower Extremity Endarterectomy, Stenting, Angioplasty or Artherectomy</b>			
35454	Transluminal balloon angioplasty, open; iliac	CPT-4	Procedure
35456	Transluminal balloon angioplasty, open; femoral-popliteal	CPT-4	Procedure
35459	Transluminal balloon angioplasty, open; tibioperoneal trunk and branches	CPT-4	Procedure
35470	Transluminal balloon angioplasty, percutaneous; tibioperoneal trunk or branches, each vessel	CPT-4	Procedure
35473	Transluminal balloon angioplasty, percutaneous; iliac	CPT-4	Procedure
35474	Transluminal balloon angioplasty, percutaneous; femoral-popliteal	CPT-4	Procedure
35482	Transluminal peripheral atherectomy, open; iliac	CPT-4	Procedure
35483	Transluminal peripheral atherectomy, open; femoral-popliteal	CPT-4	Procedure
35492	Transluminal peripheral atherectomy, percutaneous; iliac	CPT-4	Procedure
35493	Transluminal peripheral atherectomy, percutaneous; femoral-popliteal	CPT-4	Procedure

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
35495	Transluminal peripheral atherectomy, percutaneous; tibioperoneal trunk and branches	CPT-4	Procedure
37207	Transcatheter placement of an intravascular stent(s) (except coronary, carotid, vertebral, iliac and lower extremity arteries), open; initial vessel	CPT-4	Procedure
37208	Transcatheter placement of an intravascular stent(s) (except coronary, carotid, vertebral, iliac and lower extremity arteries), open; each additional vessel (List separately in addition to code for primary procedure)	CPT-4	Procedure
37220	Revascularization, endovascular, open or percutaneous, iliac artery, unilateral, initial vessel; with transluminal angioplasty	CPT-4	Procedure
37221	Revascularization, endovascular, open or percutaneous, iliac artery, unilateral, initial vessel; with transluminal stent placement(s), includes angioplasty within the same vessel, when performed	CPT-4	Procedure
37222	Revascularization, endovascular, open or percutaneous, iliac artery, each additional ipsilateral iliac vessel; with transluminal angioplasty (List separately in addition to code for primary procedure)	CPT-4	Procedure
37223	Revascularization, endovascular, open or percutaneous, iliac artery, each additional ipsilateral iliac vessel; with transluminal stent placement(s), includes angioplasty within the same vessel, when performed (List separately in addition to code for primary procedure)	CPT-4	Procedure
37224	Revascularization, endovascular, open or percutaneous, femoral, popliteal artery(s), unilateral; with transluminal angioplasty	CPT-4	Procedure
37225	Revascularization, endovascular, open or percutaneous, femoral, popliteal artery(s), unilateral; with atherectomy, includes angioplasty within the same vessel, when performed	CPT-4	Procedure
37226	Revascularization, endovascular, open or percutaneous, femoral, popliteal artery(s), unilateral; with transluminal stent placement(s), includes angioplasty within the same vessel, when performed	CPT-4	Procedure
37227	Revascularization, endovascular, open or percutaneous, femoral, popliteal artery(s), unilateral; with transluminal stent placement(s) and atherectomy, includes angioplasty within the same vessel, when performed	CPT-4	Procedure
37228	Revascularization, endovascular, open or percutaneous, tibial, peroneal artery, unilateral, initial vessel; with transluminal angioplasty	CPT-4	Procedure
37229	Revascularization, endovascular, open or percutaneous, tibial, peroneal artery, unilateral, initial vessel; with atherectomy, includes angioplasty within the same vessel, when performed	CPT-4	Procedure

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
37230	Revascularization, endovascular, open or percutaneous, tibial, peroneal artery, unilateral, initial vessel; with transluminal stent placement(s), includes angioplasty within the same vessel, when performed	CPT-4	Procedure
37231	Revascularization, endovascular, open or percutaneous, tibial, peroneal artery, unilateral, initial vessel; with transluminal stent placement(s) and atherectomy, includes angioplasty within the same vessel, when performed	CPT-4	Procedure
37232	Revascularization, endovascular, open or percutaneous, tibial/peroneal artery, unilateral, each additional vessel; with transluminal angioplasty (List separately in addition to code for primary procedure)	CPT-4	Procedure
37233	Revascularization, endovascular, open or percutaneous, tibial/peroneal artery, unilateral, each additional vessel; with atherectomy, includes angioplasty within the same vessel, when performed (List separately in addition to code for primary procedure)	CPT-4	Procedure
37234	Revascularization, endovascular, open or percutaneous, tibial/peroneal artery, unilateral, each additional vessel; with transluminal stent placement(s), includes angioplasty within the same vessel, when performed (List separately in addition to code for primary procedure)	CPT-4	Procedure
37235	Revascularization, endovascular, open or percutaneous, tibial/peroneal artery, unilateral, each additional vessel; with transluminal stent placement(s) and atherectomy, includes angioplasty within the same vessel, when performed (List separately in addition to code for primary procedure)	CPT-4	Procedure
38.10	Enderterectomy, unspecified site	ICD-9-CM	Procedure
38.18	Enderterectomy of lower limb arteries	ICD-9-CM	Procedure
<b>Lower Extremity Bypass</b>			
35666	Bypass graft, with other than vein; femoral-anterior tibial, posterior tibial, or peroneal artery	CPT-4	Procedure
35351	Thromboendarterectomy, including patch graft, if performed; iliac	CPT-4	Procedure
35355	Thromboendarterectomy, including patch graft, if performed; iliofemoral	CPT-4	Procedure
35361	Thromboendarterectomy, including patch graft, if performed; combined aortoiliac	CPT-4	Procedure
35363	Thromboendarterectomy, including patch graft, if performed; combined aortoiliofemoral	CPT-4	Procedure
35371	Thromboendarterectomy, including patch graft, if performed; common femoral	CPT-4	Procedure
35372	Thromboendarterectomy, including patch graft, if performed; deep (profunda) femoral	CPT-4	Procedure

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
35521	Bypass graft, with vein; axillary-femoral	CPT-4	Procedure
35533	Bypass graft, with vein; axillary-femoral-femoral	CPT-4	Procedure
35541	Bypass graft, with vein; aortoiliac or bi-iliac	CPT-4	Procedure
35546	Bypass graft, with vein; aortofemoral or bifemoral	CPT-4	Procedure
35548	Bypass graft, with vein; aortoiliofemoral, unilateral	CPT-4	Procedure
35549	Bypass graft, with vein; aortoiliofemoral, bilateral	CPT-4	Procedure
35551	Bypass graft, with vein; aortofemoral-popliteal	CPT-4	Procedure
35556	Bypass graft, with vein; femoral-popliteal	CPT-4	Procedure
35558	Bypass graft, with vein; femoral-femoral	CPT-4	Procedure
35563	Bypass graft, with vein; ilioiliac	CPT-4	Procedure
35565	Bypass graft, with vein; iliofemoral	CPT-4	Procedure
35566	Bypass graft, with vein; femoral-anterior tibial, posterior tibial, peroneal artery or other distal vessels	CPT-4	Procedure
35570	Bypass graft, with vein; tibial-tibial, peroneal-tibial, or tibial/peroneal trunk-tibial	CPT-4	Procedure
35571	Bypass graft, with vein; popliteal-tibial, -peroneal artery or other distal vessels	CPT-4	Procedure
35582	In-situ vein bypass; aortofemoral-popliteal (only femoral-popliteal portion in-situ)	CPT-4	Procedure
35583	In-situ vein bypass; femoral-popliteal	CPT-4	Procedure
35585	In-situ vein bypass; femoral-anterior tibial, posterior tibial, or peroneal artery	CPT-4	Procedure
35587	In-situ vein bypass; popliteal-tibial, peroneal	CPT-4	Procedure
35621	Bypass graft, with other than vein; axillary-femoral	CPT-4	Procedure
35623	Bypass graft, with other than vein; axillary-popliteal or -tibial	CPT-4	Procedure
35637	Bypass graft, with other than vein; aortoiliac	CPT-4	Procedure
35638	Bypass graft, with other than vein; aortobi-iliac	CPT-4	Procedure
35641	Bypass graft, with other than vein; aortoiliac or bi-iliac	CPT-4	Procedure
35646	Bypass graft, with other than vein; aortobifemoral	CPT-4	Procedure
35647	Bypass graft, with other than vein; aortofemoral	CPT-4	Procedure
35651	Bypass graft, with other than vein; aortofemoral-popliteal	CPT-4	Procedure
35654	Bypass graft, with other than vein; axillary-femoral-femoral	CPT-4	Procedure
35656	Bypass graft, with other than vein; femoral-popliteal	CPT-4	Procedure
35661	Bypass graft, with other than vein; femoral-femoral	CPT-4	Procedure
35663	Bypass graft, with other than vein; ilioiliac	CPT-4	Procedure
35665	Bypass graft, with other than vein; iliofemoral	CPT-4	Procedure
35671	Bypass graft, with other than vein; popliteal-tibial or -peroneal artery	CPT-4	Procedure
35681	Bypass graft; composite, prosthetic and vein (List separately in addition to code for primary procedure)	CPT-4	Procedure
35682	Bypass graft; autogenous composite, 2 segments of veins from 2 locations (List separately in addition to code for primary procedure)	CPT-4	Procedure

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
35683	Bypass graft; autogenous composite, 3 or more segments of vein from 2 or more locations (List separately in addition to code for primary procedure)	CPT-4	Procedure
35879	Revision, lower extremity arterial bypass, without thrombectomy, open; with vein patch angioplasty	CPT-4	Procedure
39.25	Aorta-iliac-femoral bypass	ICD-9-CM	Procedure
39.29	Other (peripheral) vascular shunt or bypass	ICD-9-CM	Procedure
<b>Lower Extremity Amputation</b>			
27295	Disarticulation of hip	CPT-4	Procedure
27590	Amputation, thigh, through femur, any level;	CPT-4	Procedure
27591	Amputation, thigh, through femur, any level; immediate fitting technique including first cast	CPT-4	Procedure
27592	Amputation, thigh, through femur, any level; open, circular (guillotine)	CPT-4	Procedure
27598	Disarticulation at knee	CPT-4	Procedure
27880	Amputation, leg, through tibia and fibula;	CPT-4	Procedure
27881	Amputation, leg, through tibia and fibula; with immediate fitting technique including application of first cast	CPT-4	Procedure
27882	Amputation, leg, through tibia and fibula; open, circular (guillotine)	CPT-4	Procedure
27888	Amputation, ankle, through malleoli of tibia and fibula (eg, Syme, Pirogoff type procedures), with plastic closure and resection of nerves	CPT-4	Procedure
27889	Ankle disarticulation	CPT-4	Procedure
28800	Amputation, foot; midtarsal (eg, Chopart type procedure)	CPT-4	Procedure
28805	Amputation, foot; transmetatarsal	CPT-4	Procedure
28810	Amputation, metatarsal, with toe, single	CPT-4	Procedure
28820	Amputation, toe; metatarsophalangeal joint	CPT-4	Procedure
28825	Amputation, toe; interphalangeal joint	CPT-4	Procedure
84.10	Lower limb amputation, not otherwise specified	ICD-9-CM	Procedure
84.11	Amputation of toe	ICD-9-CM	Procedure
84.12	Amputation through foot	ICD-9-CM	Procedure
84.13	Disarticulation of ankle	ICD-9-CM	Procedure
84.14	Amputation of ankle through malleoli of tibia and fibula	ICD-9-CM	Procedure
84.15	Other amputation below knee	ICD-9-CM	Procedure
84.16	Disarticulation of knee	ICD-9-CM	Procedure
84.17	Amputation above knee	ICD-9-CM	Procedure
<b>Comorbidity</b>			
<b>Asthma</b>			
493	Asthma	ICD-9-CM	Diagnosis
493.0	Extrinsic asthma	ICD-9-CM	Diagnosis
493.00	Extrinsic asthma, unspecified	ICD-9-CM	Diagnosis
493.01	Extrinsic asthma with status asthmaticus	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
493.02	Extrinsic asthma, with (acute) exacerbation	ICD-9-CM	Diagnosis
493.1	Intrinsic asthma	ICD-9-CM	Diagnosis
493.10	Intrinsic asthma, unspecified	ICD-9-CM	Diagnosis
493.11	Intrinsic asthma with status asthmaticus	ICD-9-CM	Diagnosis
493.12	Intrinsic asthma, with (acute) exacerbation	ICD-9-CM	Diagnosis
493.2	Chronic obstructive asthma	ICD-9-CM	Diagnosis
493.20	Chronic obstructive asthma, unspecified	ICD-9-CM	Diagnosis
493.21	Chronic obstructive asthma with status asthmaticus	ICD-9-CM	Diagnosis
493.22	Chronic obstructive asthma, with (acute) exacerbation	ICD-9-CM	Diagnosis
493.8	Other forms of asthma	ICD-9-CM	Diagnosis
493.81	Exercise induced bronchospasm	ICD-9-CM	Diagnosis
493.82	Cough variant asthma	ICD-9-CM	Diagnosis
493.9	Unspecified asthma	ICD-9-CM	Diagnosis
493.90	Asthma, unspecified, unspecified status	ICD-9-CM	Diagnosis
493.91	Asthma, unspecified with status asthmaticus	ICD-9-CM	Diagnosis
493.92	Asthma, unspecified, with (acute) exacerbation	ICD-9-CM	Diagnosis
<b>Cancer (Excluding Non-Melanoma Skin Cancer)</b>			
140	Malignant neoplasm of lip	ICD-9-CM	Diagnosis
140.0	Malignant neoplasm of upper lip, vermilion border	ICD-9-CM	Diagnosis
140.1	Malignant neoplasm of lower lip, vermilion border	ICD-9-CM	Diagnosis
140.3	Malignant neoplasm of upper lip, inner aspect	ICD-9-CM	Diagnosis
140.4	Malignant neoplasm of lower lip, inner aspect	ICD-9-CM	Diagnosis
140.5	Malignant neoplasm of lip, inner aspect, unspecified as to upper or lower	ICD-9-CM	Diagnosis
140.6	Malignant neoplasm of commissure of lip	ICD-9-CM	Diagnosis
140.8	Malignant neoplasm of other sites of lip	ICD-9-CM	Diagnosis
140.9	Malignant neoplasm of lip, vermilion border, unspecified as to upper or lower	ICD-9-CM	Diagnosis
141	Malignant neoplasm of tongue	ICD-9-CM	Diagnosis
141.0	Malignant neoplasm of base of tongue	ICD-9-CM	Diagnosis
141.1	Malignant neoplasm of dorsal surface of tongue	ICD-9-CM	Diagnosis
141.2	Malignant neoplasm of tip and lateral border of tongue	ICD-9-CM	Diagnosis
141.3	Malignant neoplasm of ventral surface of tongue	ICD-9-CM	Diagnosis
141.4	Malignant neoplasm of anterior two-thirds of tongue, part unspecified	ICD-9-CM	Diagnosis
141.5	Malignant neoplasm of junctional zone of tongue	ICD-9-CM	Diagnosis
141.6	Malignant neoplasm of lingual tonsil	ICD-9-CM	Diagnosis
141.8	Malignant neoplasm of other sites of tongue	ICD-9-CM	Diagnosis
141.9	Malignant neoplasm of tongue, unspecified site	ICD-9-CM	Diagnosis
142	Malignant neoplasm of major salivary glands	ICD-9-CM	Diagnosis
142.0	Malignant neoplasm of parotid gland	ICD-9-CM	Diagnosis
142.1	Malignant neoplasm of submandibular gland	ICD-9-CM	Diagnosis
142.2	Malignant neoplasm of sublingual gland	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
142.8	Malignant neoplasm of other major salivary glands	ICD-9-CM	Diagnosis
142.9	Malignant neoplasm of salivary gland, unspecified	ICD-9-CM	Diagnosis
143	Malignant neoplasm of gum	ICD-9-CM	Diagnosis
143.0	Malignant neoplasm of upper gum	ICD-9-CM	Diagnosis
143.1	Malignant neoplasm of lower gum	ICD-9-CM	Diagnosis
143.8	Malignant neoplasm of other sites of gum	ICD-9-CM	Diagnosis
143.9	Malignant neoplasm of gum, unspecified site	ICD-9-CM	Diagnosis
144	Malignant neoplasm of floor of mouth	ICD-9-CM	Diagnosis
144.0	Malignant neoplasm of anterior portion of floor of mouth	ICD-9-CM	Diagnosis
144.1	Malignant neoplasm of lateral portion of floor of mouth	ICD-9-CM	Diagnosis
144.8	Malignant neoplasm of other sites of floor of mouth	ICD-9-CM	Diagnosis
144.9	Malignant neoplasm of floor of mouth, part unspecified	ICD-9-CM	Diagnosis
145	Malignant neoplasm of other and unspecified parts of mouth	ICD-9-CM	Diagnosis
145.0	Malignant neoplasm of cheek mucosa	ICD-9-CM	Diagnosis
145.1	Malignant neoplasm of vestibule of mouth	ICD-9-CM	Diagnosis
145.2	Malignant neoplasm of hard palate	ICD-9-CM	Diagnosis
145.3	Malignant neoplasm of soft palate	ICD-9-CM	Diagnosis
145.4	Malignant neoplasm of uvula	ICD-9-CM	Diagnosis
145.5	Malignant neoplasm of palate, unspecified	ICD-9-CM	Diagnosis
145.6	Malignant neoplasm of retromolar area	ICD-9-CM	Diagnosis
145.8	Malignant neoplasm of other specified parts of mouth	ICD-9-CM	Diagnosis
145.9	Malignant neoplasm of mouth, unspecified site	ICD-9-CM	Diagnosis
146	Malignant neoplasm of oropharynx	ICD-9-CM	Diagnosis
146.0	Malignant neoplasm of tonsil	ICD-9-CM	Diagnosis
146.1	Malignant neoplasm of tonsillar fossa	ICD-9-CM	Diagnosis
146.2	Malignant neoplasm of tonsillar pillars (anterior) (posterior)	ICD-9-CM	Diagnosis
146.3	Malignant neoplasm of vallecula	ICD-9-CM	Diagnosis
146.4	Malignant neoplasm of anterior aspect of epiglottis	ICD-9-CM	Diagnosis
146.5	Malignant neoplasm of junctional region of oropharynx	ICD-9-CM	Diagnosis
146.6	Malignant neoplasm of lateral wall of oropharynx	ICD-9-CM	Diagnosis
146.7	Malignant neoplasm of posterior wall of oropharynx	ICD-9-CM	Diagnosis
146.8	Malignant neoplasm of other specified sites of oropharynx	ICD-9-CM	Diagnosis
146.9	Malignant neoplasm of oropharynx, unspecified site	ICD-9-CM	Diagnosis
147	Malignant neoplasm of nasopharynx	ICD-9-CM	Diagnosis
147.0	Malignant neoplasm of superior wall of nasopharynx	ICD-9-CM	Diagnosis
147.1	Malignant neoplasm of posterior wall of nasopharynx	ICD-9-CM	Diagnosis
147.2	Malignant neoplasm of lateral wall of nasopharynx	ICD-9-CM	Diagnosis
147.3	Malignant neoplasm of anterior wall of nasopharynx	ICD-9-CM	Diagnosis
147.8	Malignant neoplasm of other specified sites of nasopharynx	ICD-9-CM	Diagnosis
147.9	Malignant neoplasm of nasopharynx, unspecified site	ICD-9-CM	Diagnosis
148	Malignant neoplasm of hypopharynx	ICD-9-CM	Diagnosis
148.0	Malignant neoplasm of postcricoid region of hypopharynx	ICD-9-CM	Diagnosis
148.1	Malignant neoplasm of pyriform sinus	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
148.2	Malignant neoplasm of aryepiglottic fold, hypopharyngeal aspect	ICD-9-CM	Diagnosis
148.3	Malignant neoplasm of posterior hypopharyngeal wall	ICD-9-CM	Diagnosis
148.8	Malignant neoplasm of other specified sites of hypopharynx	ICD-9-CM	Diagnosis
148.9	Malignant neoplasm of hypopharynx, unspecified site	ICD-9-CM	Diagnosis
149	Malignant neoplasm of other and ill-defined sites within the lip, oral cavity, and pharynx	ICD-9-CM	Diagnosis
149.0	Malignant neoplasm of pharynx, unspecified	ICD-9-CM	Diagnosis
149.1	Malignant neoplasm of Waldeyer's ring	ICD-9-CM	Diagnosis
149.8	Malignant neoplasm of other sites within the lip and oral cavity	ICD-9-CM	Diagnosis
149.9	Malignant neoplasm of ill-defined sites of lip and oral cavity	ICD-9-CM	Diagnosis
150	Malignant neoplasm of esophagus	ICD-9-CM	Diagnosis
150.0	Malignant neoplasm of cervical esophagus	ICD-9-CM	Diagnosis
150.1	Malignant neoplasm of thoracic esophagus	ICD-9-CM	Diagnosis
150.2	Malignant neoplasm of abdominal esophagus	ICD-9-CM	Diagnosis
150.3	Malignant neoplasm of upper third of esophagus	ICD-9-CM	Diagnosis
150.4	Malignant neoplasm of middle third of esophagus	ICD-9-CM	Diagnosis
150.5	Malignant neoplasm of lower third of esophagus	ICD-9-CM	Diagnosis
150.8	Malignant neoplasm of other specified part of esophagus	ICD-9-CM	Diagnosis
150.9	Malignant neoplasm of esophagus, unspecified site	ICD-9-CM	Diagnosis
151	Malignant neoplasm of stomach	ICD-9-CM	Diagnosis
151.0	Malignant neoplasm of cardia	ICD-9-CM	Diagnosis
151.1	Malignant neoplasm of pylorus	ICD-9-CM	Diagnosis
151.2	Malignant neoplasm of pyloric antrum	ICD-9-CM	Diagnosis
151.3	Malignant neoplasm of fundus of stomach	ICD-9-CM	Diagnosis
151.4	Malignant neoplasm of body of stomach	ICD-9-CM	Diagnosis
151.5	Malignant neoplasm of lesser curvature of stomach, unspecified	ICD-9-CM	Diagnosis
151.6	Malignant neoplasm of greater curvature of stomach, unspecified	ICD-9-CM	Diagnosis
151.8	Malignant neoplasm of other specified sites of stomach	ICD-9-CM	Diagnosis
151.9	Malignant neoplasm of stomach, unspecified site	ICD-9-CM	Diagnosis
152	Malignant neoplasm of small intestine, including duodenum	ICD-9-CM	Diagnosis
152.0	Malignant neoplasm of duodenum	ICD-9-CM	Diagnosis
152.1	Malignant neoplasm of jejunum	ICD-9-CM	Diagnosis
152.2	Malignant neoplasm of ileum	ICD-9-CM	Diagnosis
152.3	Malignant neoplasm of Meckel's diverticulum	ICD-9-CM	Diagnosis
152.8	Malignant neoplasm of other specified sites of small intestine	ICD-9-CM	Diagnosis
152.9	Malignant neoplasm of small intestine, unspecified site	ICD-9-CM	Diagnosis
153	Malignant neoplasm of colon	ICD-9-CM	Diagnosis
153.0	Malignant neoplasm of hepatic flexure	ICD-9-CM	Diagnosis
153.1	Malignant neoplasm of transverse colon	ICD-9-CM	Diagnosis
153.2	Malignant neoplasm of descending colon	ICD-9-CM	Diagnosis
153.3	Malignant neoplasm of sigmoid colon	ICD-9-CM	Diagnosis
153.4	Malignant neoplasm of cecum	ICD-9-CM	Diagnosis
153.5	Malignant neoplasm of appendix	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
153.6	Malignant neoplasm of ascending colon	ICD-9-CM	Diagnosis
153.7	Malignant neoplasm of splenic flexure	ICD-9-CM	Diagnosis
153.8	Malignant neoplasm of other specified sites of large intestine	ICD-9-CM	Diagnosis
153.9	Malignant neoplasm of colon, unspecified site	ICD-9-CM	Diagnosis
154	Malignant neoplasm of rectum, rectosigmoid junction, and anus	ICD-9-CM	Diagnosis
154.0	Malignant neoplasm of rectosigmoid junction	ICD-9-CM	Diagnosis
154.1	Malignant neoplasm of rectum	ICD-9-CM	Diagnosis
154.2	Malignant neoplasm of anal canal	ICD-9-CM	Diagnosis
154.3	Malignant neoplasm of anus, unspecified site	ICD-9-CM	Diagnosis
154.8	Malignant neoplasm of other sites of rectum, rectosigmoid junction, and anus	ICD-9-CM	Diagnosis
155	Malignant neoplasm of liver and intrahepatic bile ducts	ICD-9-CM	Diagnosis
155.0	Malignant neoplasm of liver, primary	ICD-9-CM	Diagnosis
155.1	Malignant neoplasm of intrahepatic bile ducts	ICD-9-CM	Diagnosis
155.2	Malignant neoplasm of liver, not specified as primary or secondary	ICD-9-CM	Diagnosis
156	Malignant neoplasm of gallbladder and extrahepatic bile ducts	ICD-9-CM	Diagnosis
156.0	Malignant neoplasm of gallbladder	ICD-9-CM	Diagnosis
156.1	Malignant neoplasm of extrahepatic bile ducts	ICD-9-CM	Diagnosis
156.2	Malignant neoplasm of ampulla of Vater	ICD-9-CM	Diagnosis
156.8	Malignant neoplasm of other specified sites of gallbladder and extrahepatic bile ducts	ICD-9-CM	Diagnosis
156.9	Malignant neoplasm of biliary tract, part unspecified site	ICD-9-CM	Diagnosis
157	Malignant neoplasm of pancreas	ICD-9-CM	Diagnosis
157.0	Malignant neoplasm of head of pancreas	ICD-9-CM	Diagnosis
157.1	Malignant neoplasm of body of pancreas	ICD-9-CM	Diagnosis
157.2	Malignant neoplasm of tail of pancreas	ICD-9-CM	Diagnosis
157.3	Malignant neoplasm of pancreatic duct	ICD-9-CM	Diagnosis
157.4	Malignant neoplasm of islets of Langerhans	ICD-9-CM	Diagnosis
157.8	Malignant neoplasm of other specified sites of pancreas	ICD-9-CM	Diagnosis
157.9	Malignant neoplasm of pancreas, part unspecified	ICD-9-CM	Diagnosis
158	Malignant neoplasm of retroperitoneum and peritoneum	ICD-9-CM	Diagnosis
158.0	Malignant neoplasm of retroperitoneum	ICD-9-CM	Diagnosis
158.8	Malignant neoplasm of specified parts of peritoneum	ICD-9-CM	Diagnosis
158.9	Malignant neoplasm of peritoneum, unspecified	ICD-9-CM	Diagnosis
159	Malignant neoplasm of other and ill-defined sites within the digestive organs and peritoneum	ICD-9-CM	Diagnosis
159.0	Malignant neoplasm of intestinal tract, part unspecified	ICD-9-CM	Diagnosis
159.1	Malignant neoplasm of spleen, not elsewhere classified	ICD-9-CM	Diagnosis
159.8	Malignant neoplasm of other sites of digestive system and intra-abdominal organs	ICD-9-CM	Diagnosis
159.9	Malignant neoplasm of ill-defined sites of digestive organs and peritoneum	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
160	Malignant neoplasm of nasal cavities, middle ear, and accessory sinuses	ICD-9-CM	Diagnosis
160.0	Malignant neoplasm of nasal cavities	ICD-9-CM	Diagnosis
160.1	Malignant neoplasm of auditory tube, middle ear, and mastoid air cells	ICD-9-CM	Diagnosis
160.2	Malignant neoplasm of maxillary sinus	ICD-9-CM	Diagnosis
160.3	Malignant neoplasm of ethmoidal sinus	ICD-9-CM	Diagnosis
160.4	Malignant neoplasm of frontal sinus	ICD-9-CM	Diagnosis
160.5	Malignant neoplasm of sphenoidal sinus	ICD-9-CM	Diagnosis
160.8	Malignant neoplasm of other sites of nasal cavities, middle ear, and accessory sinuses	ICD-9-CM	Diagnosis
160.9	Malignant neoplasm of site of nasal cavities, middle ear, and accessory sinus, unspecified site	ICD-9-CM	Diagnosis
161	Malignant neoplasm of larynx	ICD-9-CM	Diagnosis
161.0	Malignant neoplasm of glottis	ICD-9-CM	Diagnosis
161.1	Malignant neoplasm of supraglottis	ICD-9-CM	Diagnosis
161.2	Malignant neoplasm of subglottis	ICD-9-CM	Diagnosis
161.3	Malignant neoplasm of laryngeal cartilages	ICD-9-CM	Diagnosis
161.8	Malignant neoplasm of other specified sites of larynx	ICD-9-CM	Diagnosis
161.9	Malignant neoplasm of larynx, unspecified site	ICD-9-CM	Diagnosis
162	Malignant neoplasm of trachea, bronchus, and lung	ICD-9-CM	Diagnosis
162.0	Malignant neoplasm of trachea	ICD-9-CM	Diagnosis
162.2	Malignant neoplasm of main bronchus	ICD-9-CM	Diagnosis
162.3	Malignant neoplasm of upper lobe, bronchus, or lung	ICD-9-CM	Diagnosis
162.4	Malignant neoplasm of middle lobe, bronchus, or lung	ICD-9-CM	Diagnosis
162.5	Malignant neoplasm of lower lobe, bronchus, or lung	ICD-9-CM	Diagnosis
162.8	Malignant neoplasm of other parts of bronchus or lung	ICD-9-CM	Diagnosis
162.9	Malignant neoplasm of bronchus and lung, unspecified site	ICD-9-CM	Diagnosis
163	Malignant neoplasm of pleura	ICD-9-CM	Diagnosis
163.0	Malignant neoplasm of parietal pleura	ICD-9-CM	Diagnosis
163.1	Malignant neoplasm of visceral pleura	ICD-9-CM	Diagnosis
163.8	Malignant neoplasm of other specified sites of pleura	ICD-9-CM	Diagnosis
163.9	Malignant neoplasm of pleura, unspecified site	ICD-9-CM	Diagnosis
164	Malignant neoplasm of thymus, heart, and mediastinum	ICD-9-CM	Diagnosis
164.0	Malignant neoplasm of thymus	ICD-9-CM	Diagnosis
164.1	Malignant neoplasm of heart	ICD-9-CM	Diagnosis
164.2	Malignant neoplasm of anterior mediastinum	ICD-9-CM	Diagnosis
164.3	Malignant neoplasm of posterior mediastinum	ICD-9-CM	Diagnosis
164.8	Malignant neoplasm of other parts of mediastinum	ICD-9-CM	Diagnosis
164.9	Malignant neoplasm of mediastinum, part unspecified	ICD-9-CM	Diagnosis
165	Malignant neoplasm of other and ill-defined sites within the respiratory system and intrathoracic organs	ICD-9-CM	Diagnosis
165.0	Malignant neoplasm of upper respiratory tract, part unspecified	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
165.8	Malignant neoplasm of other sites within the respiratory system and intrathoracic organs	ICD-9-CM	Diagnosis
165.9	Malignant neoplasm of ill-defined sites within the respiratory system	ICD-9-CM	Diagnosis
170	Malignant neoplasm of bone and articular cartilage	ICD-9-CM	Diagnosis
170.0	Malignant neoplasm of bones of skull and face, except mandible	ICD-9-CM	Diagnosis
170.1	Malignant neoplasm of mandible	ICD-9-CM	Diagnosis
170.2	Malignant neoplasm of vertebral column, excluding sacrum and coccyx	ICD-9-CM	Diagnosis
170.3	Malignant neoplasm of ribs, sternum, and clavicle	ICD-9-CM	Diagnosis
170.4	Malignant neoplasm of scapula and long bones of upper limb	ICD-9-CM	Diagnosis
170.5	Malignant neoplasm of short bones of upper limb	ICD-9-CM	Diagnosis
170.6	Malignant neoplasm of pelvic bones, sacrum, and coccyx	ICD-9-CM	Diagnosis
170.7	Malignant neoplasm of long bones of lower limb	ICD-9-CM	Diagnosis
170.8	Malignant neoplasm of short bones of lower limb	ICD-9-CM	Diagnosis
170.9	Malignant neoplasm of bone and articular cartilage, site unspecified	ICD-9-CM	Diagnosis
171	Malignant neoplasm of connective and other soft tissue	ICD-9-CM	Diagnosis
171.0	Malignant neoplasm of connective and other soft tissue of head, face, and neck	ICD-9-CM	Diagnosis
171.2	Malignant neoplasm of connective and other soft tissue of upper limb, including shoulder	ICD-9-CM	Diagnosis
171.3	Malignant neoplasm of connective and other soft tissue of lower limb, including hip	ICD-9-CM	Diagnosis
171.4	Malignant neoplasm of connective and other soft tissue of thorax	ICD-9-CM	Diagnosis
171.5	Malignant neoplasm of connective and other soft tissue of abdomen	ICD-9-CM	Diagnosis
171.6	Malignant neoplasm of connective and other soft tissue of pelvis	ICD-9-CM	Diagnosis
171.7	Malignant neoplasm of connective and other soft tissue of trunk, unspecified site	ICD-9-CM	Diagnosis
171.8	Malignant neoplasm of other specified sites of connective and other soft tissue	ICD-9-CM	Diagnosis
171.9	Malignant neoplasm of connective and other soft tissue, site unspecified	ICD-9-CM	Diagnosis
172	Malignant melanoma of skin	ICD-9-CM	Diagnosis
172.0	Malignant melanoma of skin of lip	ICD-9-CM	Diagnosis
172.1	Malignant melanoma of skin of eyelid, including canthus	ICD-9-CM	Diagnosis
172.2	Malignant melanoma of skin of ear and external auditory canal	ICD-9-CM	Diagnosis
172.3	Malignant melanoma of skin of other and unspecified parts of face	ICD-9-CM	Diagnosis
172.4	Malignant melanoma of skin of scalp and neck	ICD-9-CM	Diagnosis
172.5	Malignant melanoma of skin of trunk, except scrotum	ICD-9-CM	Diagnosis
172.6	Malignant melanoma of skin of upper limb, including shoulder	ICD-9-CM	Diagnosis
172.7	Malignant melanoma of skin of lower limb, including hip	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
172.8	Malignant melanoma of other specified sites of skin	ICD-9-CM	Diagnosis
172.9	Melanoma of skin, site unspecified	ICD-9-CM	Diagnosis
174	Malignant neoplasm of female breast	ICD-9-CM	Diagnosis
174.0	Malignant neoplasm of nipple and areola of female breast	ICD-9-CM	Diagnosis
174.1	Malignant neoplasm of central portion of female breast	ICD-9-CM	Diagnosis
174.2	Malignant neoplasm of upper-inner quadrant of female breast	ICD-9-CM	Diagnosis
174.3	Malignant neoplasm of lower-inner quadrant of female breast	ICD-9-CM	Diagnosis
174.4	Malignant neoplasm of upper-outer quadrant of female breast	ICD-9-CM	Diagnosis
174.5	Malignant neoplasm of lower-outer quadrant of female breast	ICD-9-CM	Diagnosis
174.6	Malignant neoplasm of axillary tail of female breast	ICD-9-CM	Diagnosis
174.8	Malignant neoplasm of other specified sites of female breast	ICD-9-CM	Diagnosis
174.9	Malignant neoplasm of breast (female), unspecified site	ICD-9-CM	Diagnosis
175	Malignant neoplasm of male breast	ICD-9-CM	Diagnosis
175.0	Malignant neoplasm of nipple and areola of male breast	ICD-9-CM	Diagnosis
175.9	Malignant neoplasm of other and unspecified sites of male breast	ICD-9-CM	Diagnosis
176	Kaposi's sarcoma	ICD-9-CM	Diagnosis
176.0	Kaposi's sarcoma of skin	ICD-9-CM	Diagnosis
176.1	Kaposi's sarcoma of soft tissue	ICD-9-CM	Diagnosis
176.2	Kaposi's sarcoma of palate	ICD-9-CM	Diagnosis
176.3	Kaposi's sarcoma of gastrointestinal sites	ICD-9-CM	Diagnosis
176.4	Kaposi's sarcoma of lung	ICD-9-CM	Diagnosis
176.5	Kaposi's sarcoma of lymph nodes	ICD-9-CM	Diagnosis
176.8	Kaposi's sarcoma of other specified sites	ICD-9-CM	Diagnosis
176.9	Kaposi's sarcoma of unspecified site	ICD-9-CM	Diagnosis
179	Malignant neoplasm of uterus, part unspecified	ICD-9-CM	Diagnosis
180	Malignant neoplasm of cervix uteri	ICD-9-CM	Diagnosis
180.0	Malignant neoplasm of endocervix	ICD-9-CM	Diagnosis
180.1	Malignant neoplasm of exocervix	ICD-9-CM	Diagnosis
180.8	Malignant neoplasm of other specified sites of cervix	ICD-9-CM	Diagnosis
180.9	Malignant neoplasm of cervix uteri, unspecified site	ICD-9-CM	Diagnosis
181	Malignant neoplasm of placenta	ICD-9-CM	Diagnosis
182	Malignant neoplasm of body of uterus	ICD-9-CM	Diagnosis
182.0	Malignant neoplasm of corpus uteri, except isthmus	ICD-9-CM	Diagnosis
182.1	Malignant neoplasm of isthmus	ICD-9-CM	Diagnosis
182.8	Malignant neoplasm of other specified sites of body of uterus	ICD-9-CM	Diagnosis
183	Malignant neoplasm of ovary and other uterine adnexa	ICD-9-CM	Diagnosis
183.0	Malignant neoplasm of ovary	ICD-9-CM	Diagnosis
183.2	Malignant neoplasm of fallopian tube	ICD-9-CM	Diagnosis
183.3	Malignant neoplasm of broad ligament of uterus	ICD-9-CM	Diagnosis
183.4	Malignant neoplasm of parametrium of uterus	ICD-9-CM	Diagnosis
183.5	Malignant neoplasm of round ligament of uterus	ICD-9-CM	Diagnosis
183.8	Malignant neoplasm of other specified sites of uterine adnexa	ICD-9-CM	Diagnosis
183.9	Malignant neoplasm of uterine adnexa, unspecified site	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
184	Malignant neoplasm of other and unspecified female genital organs	ICD-9-CM	Diagnosis
184.0	Malignant neoplasm of vagina	ICD-9-CM	Diagnosis
184.1	Malignant neoplasm of labia majora	ICD-9-CM	Diagnosis
184.2	Malignant neoplasm of labia minora	ICD-9-CM	Diagnosis
184.3	Malignant neoplasm of clitoris	ICD-9-CM	Diagnosis
184.4	Malignant neoplasm of vulva, unspecified site	ICD-9-CM	Diagnosis
184.8	Malignant neoplasm of other specified sites of female genital organs	ICD-9-CM	Diagnosis
184.9	Malignant neoplasm of female genital organ, site unspecified	ICD-9-CM	Diagnosis
185	Malignant neoplasm of prostate	ICD-9-CM	Diagnosis
186	Malignant neoplasm of testis	ICD-9-CM	Diagnosis
186.0	Malignant neoplasm of undescended testis	ICD-9-CM	Diagnosis
186.9	Malignant neoplasm of other and unspecified testis	ICD-9-CM	Diagnosis
187	Malignant neoplasm of penis and other male genital organs	ICD-9-CM	Diagnosis
187.1	Malignant neoplasm of prepuce	ICD-9-CM	Diagnosis
187.2	Malignant neoplasm of glans penis	ICD-9-CM	Diagnosis
187.3	Malignant neoplasm of body of penis	ICD-9-CM	Diagnosis
187.4	Malignant neoplasm of penis, part unspecified	ICD-9-CM	Diagnosis
187.5	Malignant neoplasm of epididymis	ICD-9-CM	Diagnosis
187.6	Malignant neoplasm of spermatic cord	ICD-9-CM	Diagnosis
187.7	Malignant neoplasm of scrotum	ICD-9-CM	Diagnosis
187.8	Malignant neoplasm of other specified sites of male genital organs	ICD-9-CM	Diagnosis
187.9	Malignant neoplasm of male genital organ, site unspecified	ICD-9-CM	Diagnosis
188	Malignant neoplasm of bladder	ICD-9-CM	Diagnosis
188.0	Malignant neoplasm of trigone of urinary bladder	ICD-9-CM	Diagnosis
188.1	Malignant neoplasm of dome of urinary bladder	ICD-9-CM	Diagnosis
188.2	Malignant neoplasm of lateral wall of urinary bladder	ICD-9-CM	Diagnosis
188.3	Malignant neoplasm of anterior wall of urinary bladder	ICD-9-CM	Diagnosis
188.4	Malignant neoplasm of posterior wall of urinary bladder	ICD-9-CM	Diagnosis
188.5	Malignant neoplasm of bladder neck	ICD-9-CM	Diagnosis
188.6	Malignant neoplasm of ureteric orifice	ICD-9-CM	Diagnosis
188.7	Malignant neoplasm of urachus	ICD-9-CM	Diagnosis
188.8	Malignant neoplasm of other specified sites of bladder	ICD-9-CM	Diagnosis
188.9	Malignant neoplasm of bladder, part unspecified	ICD-9-CM	Diagnosis
189	Malignant neoplasm of kidney and other and unspecified urinary organs	ICD-9-CM	Diagnosis
189.0	Malignant neoplasm of kidney, except pelvis	ICD-9-CM	Diagnosis
189.1	Malignant neoplasm of renal pelvis	ICD-9-CM	Diagnosis
189.2	Malignant neoplasm of ureter	ICD-9-CM	Diagnosis
189.3	Malignant neoplasm of urethra	ICD-9-CM	Diagnosis
189.4	Malignant neoplasm of paraurethral glands	ICD-9-CM	Diagnosis
189.8	Malignant neoplasm of other specified sites of urinary organs	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
189.9	Malignant neoplasm of urinary organ, site unspecified	ICD-9-CM	Diagnosis
190	Malignant neoplasm of eye	ICD-9-CM	Diagnosis
190.0	Malignant neoplasm of eyeball, except conjunctiva, cornea, retina, and choroid	ICD-9-CM	Diagnosis
190.1	Malignant neoplasm of orbit	ICD-9-CM	Diagnosis
190.2	Malignant neoplasm of lacrimal gland	ICD-9-CM	Diagnosis
190.3	Malignant neoplasm of conjunctiva	ICD-9-CM	Diagnosis
190.4	Malignant neoplasm of cornea	ICD-9-CM	Diagnosis
190.5	Malignant neoplasm of retina	ICD-9-CM	Diagnosis
190.6	Malignant neoplasm of choroid	ICD-9-CM	Diagnosis
190.7	Malignant neoplasm of lacrimal duct	ICD-9-CM	Diagnosis
190.8	Malignant neoplasm of other specified sites of eye	ICD-9-CM	Diagnosis
190.9	Malignant neoplasm of eye, part unspecified	ICD-9-CM	Diagnosis
191	Malignant neoplasm of brain	ICD-9-CM	Diagnosis
191.0	Malignant neoplasm of cerebrum, except lobes and ventricles	ICD-9-CM	Diagnosis
191.1	Malignant neoplasm of frontal lobe of brain	ICD-9-CM	Diagnosis
191.2	Malignant neoplasm of temporal lobe of brain	ICD-9-CM	Diagnosis
191.3	Malignant neoplasm of parietal lobe of brain	ICD-9-CM	Diagnosis
191.4	Malignant neoplasm of occipital lobe of brain	ICD-9-CM	Diagnosis
191.5	Malignant neoplasm of ventricles of brain	ICD-9-CM	Diagnosis
191.6	Malignant neoplasm of cerebellum NOS	ICD-9-CM	Diagnosis
191.7	Malignant neoplasm of brain stem	ICD-9-CM	Diagnosis
191.8	Malignant neoplasm of other parts of brain	ICD-9-CM	Diagnosis
191.9	Malignant neoplasm of brain, unspecified site	ICD-9-CM	Diagnosis
192	Malignant neoplasm of other and unspecified parts of nervous system	ICD-9-CM	Diagnosis
192.0	Malignant neoplasm of cranial nerves	ICD-9-CM	Diagnosis
192.1	Malignant neoplasm of cerebral meninges	ICD-9-CM	Diagnosis
192.2	Malignant neoplasm of spinal cord	ICD-9-CM	Diagnosis
192.3	Malignant neoplasm of spinal meninges	ICD-9-CM	Diagnosis
192.8	Malignant neoplasm of other specified sites of nervous system	ICD-9-CM	Diagnosis
192.9	Malignant neoplasm of nervous system, part unspecified	ICD-9-CM	Diagnosis
193	Malignant neoplasm of thyroid gland	ICD-9-CM	Diagnosis
194	Malignant neoplasm of other endocrine glands and related structures	ICD-9-CM	Diagnosis
194.0	Malignant neoplasm of adrenal gland	ICD-9-CM	Diagnosis
194.1	Malignant neoplasm of parathyroid gland	ICD-9-CM	Diagnosis
194.3	Malignant neoplasm of pituitary gland and craniopharyngeal duct	ICD-9-CM	Diagnosis
194.4	Malignant neoplasm of pineal gland	ICD-9-CM	Diagnosis
194.5	Malignant neoplasm of carotid body	ICD-9-CM	Diagnosis
194.6	Malignant neoplasm of aortic body and other paraganglia	ICD-9-CM	Diagnosis
194.8	Malignant neoplasm of other endocrine glands and related structures	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
194.9	Malignant neoplasm of endocrine gland, site unspecified	ICD-9-CM	Diagnosis
195	Malignant neoplasm of other and ill-defined sites	ICD-9-CM	Diagnosis
195.0	Malignant neoplasm of head, face, and neck	ICD-9-CM	Diagnosis
195.1	Malignant neoplasm of thorax	ICD-9-CM	Diagnosis
195.2	Malignant neoplasm of abdomen	ICD-9-CM	Diagnosis
195.3	Malignant neoplasm of pelvis	ICD-9-CM	Diagnosis
195.4	Malignant neoplasm of upper limb	ICD-9-CM	Diagnosis
195.5	Malignant neoplasm of lower limb	ICD-9-CM	Diagnosis
195.8	Malignant neoplasm of other specified sites	ICD-9-CM	Diagnosis
196	Secondary and unspecified malignant neoplasm of lymph nodes	ICD-9-CM	Diagnosis
196.0	Secondary and unspecified malignant neoplasm of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
196.1	Secondary and unspecified malignant neoplasm of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
196.2	Secondary and unspecified malignant neoplasm of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
196.3	Secondary and unspecified malignant neoplasm of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
196.5	Secondary and unspecified malignant neoplasm of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
196.6	Secondary and unspecified malignant neoplasm of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
196.8	Secondary and unspecified malignant neoplasm of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
196.9	Secondary and unspecified malignant neoplasm of lymph nodes, site unspecified	ICD-9-CM	Diagnosis
197	Secondary malignant neoplasm of respiratory and digestive systems	ICD-9-CM	Diagnosis
197.0	Secondary malignant neoplasm of lung	ICD-9-CM	Diagnosis
197.1	Secondary malignant neoplasm of mediastinum	ICD-9-CM	Diagnosis
197.2	Secondary malignant neoplasm of pleura	ICD-9-CM	Diagnosis
197.3	Secondary malignant neoplasm of other respiratory organs	ICD-9-CM	Diagnosis
197.4	Secondary malignant neoplasm of small intestine including duodenum	ICD-9-CM	Diagnosis
197.5	Secondary malignant neoplasm of large intestine and rectum	ICD-9-CM	Diagnosis
197.6	Secondary malignant neoplasm of retroperitoneum and peritoneum	ICD-9-CM	Diagnosis
197.7	Secondary malignant neoplasm of liver	ICD-9-CM	Diagnosis
197.8	Secondary malignant neoplasm of other digestive organs and spleen	ICD-9-CM	Diagnosis
198	Secondary malignant neoplasm of other specified sites	ICD-9-CM	Diagnosis
198.0	Secondary malignant neoplasm of kidney	ICD-9-CM	Diagnosis
198.1	Secondary malignant neoplasm of other urinary organs	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
198.2	Secondary malignant neoplasm of skin	ICD-9-CM	Diagnosis
198.3	Secondary malignant neoplasm of brain and spinal cord	ICD-9-CM	Diagnosis
198.4	Secondary malignant neoplasm of other parts of nervous system	ICD-9-CM	Diagnosis
198.5	Secondary malignant neoplasm of bone and bone marrow	ICD-9-CM	Diagnosis
198.6	Secondary malignant neoplasm of ovary	ICD-9-CM	Diagnosis
198.7	Secondary malignant neoplasm of adrenal gland	ICD-9-CM	Diagnosis
198.8	Secondary malignant neoplasm of other specified sites	ICD-9-CM	Diagnosis
198.81	Secondary malignant neoplasm of breast	ICD-9-CM	Diagnosis
198.82	Secondary malignant neoplasm of genital organs	ICD-9-CM	Diagnosis
198.89	Secondary malignant neoplasm of other specified sites	ICD-9-CM	Diagnosis
199	Malignant neoplasm without specification of site	ICD-9-CM	Diagnosis
199.0	Disseminated malignant neoplasm	ICD-9-CM	Diagnosis
199.1	Other malignant neoplasm of unspecified site	ICD-9-CM	Diagnosis
199.2	Malignant neoplasm associated with transplanted organ	ICD-9-CM	Diagnosis
200	Lymphosarcoma and reticulosarcoma and other specified malignant tumors of lymphatic tissue	ICD-9-CM	Diagnosis
200.0	Reticulosarcoma	ICD-9-CM	Diagnosis
200.00	Reticulosarcoma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
200.01	Reticulosarcoma of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
200.02	Reticulosarcoma of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
200.03	Reticulosarcoma of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
200.04	Reticulosarcoma of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
200.05	Reticulosarcoma of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
200.06	Reticulosarcoma of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
200.07	Reticulosarcoma of spleen	ICD-9-CM	Diagnosis
200.08	Reticulosarcoma of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
200.1	Lymphosarcoma	ICD-9-CM	Diagnosis
200.10	Lymphosarcoma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
200.11	Lymphosarcoma of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
200.12	Lymphosarcoma of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
200.13	Lymphosarcoma of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
200.14	Lymphosarcoma of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
200.15	Lymphosarcoma of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
200.16	Lymphosarcoma of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
200.17	Lymphosarcoma of spleen	ICD-9-CM	Diagnosis
200.18	Lymphosarcoma of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
200.2	Burkitt's tumor or lymphoma	ICD-9-CM	Diagnosis
200.20	Burkitt's tumor or lymphoma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
200.21	Burkitt's tumor or lymphoma of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
200.22	Burkitt's tumor or lymphoma of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
200.23	Burkitt's tumor or lymphoma of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
200.24	Burkitt's tumor or lymphoma of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
200.25	Burkitt's tumor or lymphoma of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
200.26	Burkitt's tumor or lymphoma of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
200.27	Burkitt's tumor or lymphoma of spleen	ICD-9-CM	Diagnosis
200.28	Burkitt's tumor or lymphoma of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
200.3	Marginal zone lymphoma	ICD-9-CM	Diagnosis
200.30	Marginal zone lymphoma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
200.31	Marginal zone lymphoma, lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
200.32	Marginal zone lymphoma, intrathoracic lymph nodes	ICD-9-CM	Diagnosis
200.33	Marginal zone lymphoma, intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
200.34	Marginal zone lymphoma, lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
200.35	Marginal zone lymphoma, lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
200.36	Marginal zone lymphoma, intrapelvic lymph nodes	ICD-9-CM	Diagnosis
200.37	Marginal zone lymphoma, spleen	ICD-9-CM	Diagnosis
200.38	Marginal zone lymphoma, lymph nodes of multiple sites	ICD-9-CM	Diagnosis
200.4	Mantle cell lymphoma	ICD-9-CM	Diagnosis
200.40	Mantle cell lymphoma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
200.41	Mantle cell lymphoma, lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
200.42	Mantle cell lymphoma, intrathoracic lymph nodes	ICD-9-CM	Diagnosis
200.43	Mantle cell lymphoma, intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
200.44	Mantle cell lymphoma, lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
200.45	Mantle cell lymphoma, lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
200.46	Mantle cell lymphoma, intrapelvic lymph nodes	ICD-9-CM	Diagnosis
200.47	Mantle cell lymphoma, spleen	ICD-9-CM	Diagnosis
200.48	Mantle cell lymphoma, lymph nodes of multiple sites	ICD-9-CM	Diagnosis
200.5	Primary central nervous system lymphoma	ICD-9-CM	Diagnosis
200.50	Primary central nervous system lymphoma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
200.51	Primary central nervous system lymphoma, lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
200.52	Primary central nervous system lymphoma, intrathoracic lymph nodes	ICD-9-CM	Diagnosis
200.53	Primary central nervous system lymphoma, intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
200.54	Primary central nervous system lymphoma, lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
200.55	Primary central nervous system lymphoma, lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
200.56	Primary central nervous system lymphoma, intrapelvic lymph nodes	ICD-9-CM	Diagnosis
200.57	Primary central nervous system lymphoma, spleen	ICD-9-CM	Diagnosis
200.58	Primary central nervous system lymphoma, lymph nodes of multiple sites	ICD-9-CM	Diagnosis
200.6	Anaplastic large cell lymphoma	ICD-9-CM	Diagnosis
200.60	Anaplastic large cell lymphoma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
200.61	Anaplastic large cell lymphoma, lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
200.62	Anaplastic large cell lymphoma, intrathoracic lymph nodes	ICD-9-CM	Diagnosis
200.63	Anaplastic large cell lymphoma, intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
200.64	Anaplastic large cell lymphoma, lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
200.65	Anaplastic large cell lymphoma, lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
200.66	Anaplastic large cell lymphoma, intrapelvic lymph nodes	ICD-9-CM	Diagnosis
200.67	Anaplastic large cell lymphoma, spleen	ICD-9-CM	Diagnosis
200.68	Anaplastic large cell lymphoma, lymph nodes of multiple sites	ICD-9-CM	Diagnosis
200.7	Large cell lymphoma	ICD-9-CM	Diagnosis
200.70	Large cell lymphoma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
200.71	Large cell lymphoma, lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
200.72	Large cell lymphoma, intrathoracic lymph nodes	ICD-9-CM	Diagnosis
200.73	Large cell lymphoma, intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
200.74	Large cell lymphoma, lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
200.75	Large cell lymphoma, lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
200.76	Large cell lymphoma, intrapelvic lymph nodes	ICD-9-CM	Diagnosis
200.77	Large cell lymphoma, spleen	ICD-9-CM	Diagnosis
200.78	Large cell lymphoma, lymph nodes of multiple sites	ICD-9-CM	Diagnosis
200.8	Other named variants of lymphosarcoma and reticulosarcoma	ICD-9-CM	Diagnosis
200.80	Other named variants, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
200.81	Other named variants of lymphosarcoma and reticulosarcoma of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
200.82	Other named variants of lymphosarcoma and reticulosarcoma of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
200.83	Other named variants of lymphosarcoma and reticulosarcoma of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
200.84	Other named variants of lymphosarcoma and reticulosarcoma of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
200.85	Other named variants of lymphosarcoma and reticulosarcoma of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
200.86	Other named variants of lymphosarcoma and reticulosarcoma of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
200.87	Other named variants of lymphosarcoma and reticulosarcoma of spleen	ICD-9-CM	Diagnosis
200.88	Other named variants of lymphosarcoma and reticulosarcoma of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
201	Hodgkin's disease	ICD-9-CM	Diagnosis
201.0	Hodgkin's paraganuloma	ICD-9-CM	Diagnosis
201.00	Hodgkin's paraganuloma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
201.01	Hodgkin's paraganuloma of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
201.02	Hodgkin's paraganuloma of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
201.03	Hodgkin's paraganuloma of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
201.04	Hodgkin's paraganuloma of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
201.05	Hodgkin's paraganuloma of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
201.06	Hodgkin's paraganuloma of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
201.07	Hodgkin's paraganuloma of spleen	ICD-9-CM	Diagnosis
201.08	Hodgkin's paraganuloma of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
201.1	Hodgkin's granuloma	ICD-9-CM	Diagnosis
201.10	Hodgkin's granuloma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
201.11	Hodgkin's granuloma of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
201.12	Hodgkin's granuloma of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
201.13	Hodgkin's granuloma of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
201.14	Hodgkin's granuloma of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
201.15	Hodgkin's granuloma of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
201.16	Hodgkin's granuloma of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
201.17	Hodgkin's granuloma of spleen	ICD-9-CM	Diagnosis
201.18	Hodgkin's granuloma of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
201.2	Hodgkin's sarcoma	ICD-9-CM	Diagnosis
201.20	Hodgkin's sarcoma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
201.21	Hodgkin's sarcoma of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
201.22	Hodgkin's sarcoma of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
201.23	Hodgkin's sarcoma of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
201.24	Hodgkin's sarcoma of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
201.25	Hodgkin's sarcoma of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
201.26	Hodgkin's sarcoma of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
201.27	Hodgkin's sarcoma of spleen	ICD-9-CM	Diagnosis
201.28	Hodgkin's sarcoma of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
201.4	Hodgkin's disease, lymphocytic-histiocytic predominance	ICD-9-CM	Diagnosis
201.40	Hodgkin's disease, lymphocytic-histiocytic predominance, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
201.41	Hodgkin's disease, lymphocytic-histiocytic predominance of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
201.42	Hodgkin's disease, lymphocytic-histiocytic predominance of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
201.43	Hodgkin's disease, lymphocytic-histiocytic predominance of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
201.44	Hodgkin's disease, lymphocytic-histiocytic predominance of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
201.45	Hodgkin's disease, lymphocytic-histiocytic predominance of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
201.46	Hodgkin's disease, lymphocytic-histiocytic predominance of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
201.47	Hodgkin's disease, lymphocytic-histiocytic predominance of spleen	ICD-9-CM	Diagnosis
201.48	Hodgkin's disease, lymphocytic-histiocytic predominance of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
201.5	Hodgkin's disease, nodular sclerosis	ICD-9-CM	Diagnosis
201.50	Hodgkin's disease, nodular sclerosis, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
201.51	Hodgkin's disease, nodular sclerosis, of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
201.52	Hodgkin's disease, nodular sclerosis, of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
201.53	Hodgkin's disease, nodular sclerosis, of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
201.54	Hodgkin's disease, nodular sclerosis, of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
201.55	Hodgkin's disease, nodular sclerosis, of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
201.56	Hodgkin's disease, nodular sclerosis, of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
201.57	Hodgkin's disease, nodular sclerosis, of spleen	ICD-9-CM	Diagnosis
201.58	Hodgkin's disease, nodular sclerosis, of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
201.6	Hodgkin's disease, mixed cellularity	ICD-9-CM	Diagnosis
201.60	Hodgkin's disease, mixed cellularity, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
201.61	Hodgkin's disease, mixed cellularity, involving lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
201.62	Hodgkin's disease, mixed cellularity, of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
201.63	Hodgkin's disease, mixed cellularity, of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
201.64	Hodgkin's disease, mixed cellularity, of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
201.65	Hodgkin's disease, mixed cellularity, of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
201.66	Hodgkin's disease, mixed cellularity, of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
201.67	Hodgkin's disease, mixed cellularity, of spleen	ICD-9-CM	Diagnosis
201.68	Hodgkin's disease, mixed cellularity, of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
201.7	Hodgkin's disease, lymphocytic depletion	ICD-9-CM	Diagnosis
201.70	Hodgkin's disease, lymphocytic depletion, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
201.71	Hodgkin's disease, lymphocytic depletion, of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
201.72	Hodgkin's disease, lymphocytic depletion, of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
201.73	Hodgkin's disease, lymphocytic depletion, of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
201.74	Hodgkin's disease, lymphocytic depletion, of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
201.75	Hodgkin's disease, lymphocytic depletion, of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
201.76	Hodgkin's disease, lymphocytic depletion, of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
201.77	Hodgkin's disease, lymphocytic depletion, of spleen	ICD-9-CM	Diagnosis
201.78	Hodgkin's disease, lymphocytic depletion, of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
201.9	Hodgkin's disease, unspecified type	ICD-9-CM	Diagnosis
201.90	Hodgkin's disease, unspecified type, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
201.91	Hodgkin's disease, unspecified type, of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
201.92	Hodgkin's disease, unspecified type, of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
201.93	Hodgkin's disease, unspecified type, of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
201.94	Hodgkin's disease, unspecified type, of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
201.95	Hodgkin's disease, unspecified type, of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
201.96	Hodgkin's disease, unspecified type, of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
201.97	Hodgkin's disease, unspecified type, of spleen	ICD-9-CM	Diagnosis
201.98	Hodgkin's disease, unspecified type, of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
202	Other malignant neoplasms of lymphoid and histiocytic tissue	ICD-9-CM	Diagnosis
202.0	Nodular lymphoma	ICD-9-CM	Diagnosis
202.00	Nodular lymphoma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
202.01	Nodular lymphoma of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
202.02	Nodular lymphoma of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
202.03	Nodular lymphoma of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
202.04	Nodular lymphoma of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
202.05	Nodular lymphoma of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
202.06	Nodular lymphoma of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
202.07	Nodular lymphoma of spleen	ICD-9-CM	Diagnosis
202.08	Nodular lymphoma of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
202.1	Mycosis fungoides	ICD-9-CM	Diagnosis
202.10	Mycosis fungoides, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
202.11	Mycosis fungoides of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
202.12	Mycosis fungoides of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
202.13	Mycosis fungoides of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
202.14	Mycosis fungoides of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
202.15	Mycosis fungoides of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
202.16	Mycosis fungoides of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
202.17	Mycosis fungoides of spleen	ICD-9-CM	Diagnosis
202.18	Mycosis fungoides of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
202.2	Sezary's disease	ICD-9-CM	Diagnosis
202.20	Sezary's disease, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
202.21	Sezary's disease of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
202.22	Sezary's disease of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
202.23	Sezary's disease of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
202.24	Sezary's disease of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
202.25	Sezary's disease of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
202.26	Sezary's disease of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
202.27	Sezary's disease of spleen	ICD-9-CM	Diagnosis
202.28	Sezary's disease of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
202.3	Malignant histiocytosis	ICD-9-CM	Diagnosis
202.30	Malignant histiocytosis, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
202.31	Malignant histiocytosis of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
202.32	Malignant histiocytosis of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
202.33	Malignant histiocytosis of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
202.34	Malignant histiocytosis of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
202.35	Malignant histiocytosis of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
202.36	Malignant histiocytosis of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
202.37	Malignant histiocytosis of spleen	ICD-9-CM	Diagnosis
202.38	Malignant histiocytosis of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
202.4	Leukemic reticuloendotheliosis	ICD-9-CM	Diagnosis
202.40	Leukemic reticuloendotheliosis, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
202.41	Leukemic reticuloendotheliosis of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
202.42	Leukemic reticuloendotheliosis of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
202.43	Leukemic reticuloendotheliosis of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
202.44	Leukemic reticuloendotheliosis of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
202.45	Leukemic reticuloendotheliosis of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
202.46	Leukemic reticuloendotheliosis of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
202.47	Leukemic reticuloendotheliosis of spleen	ICD-9-CM	Diagnosis
202.48	Leukemic reticuloendotheliosis of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
202.5	Letterer-Siwe disease	ICD-9-CM	Diagnosis
202.50	Letterer-Siwe disease, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
202.51	Letterer-Siwe disease of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
202.52	Letterer-Siwe disease of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
202.53	Letterer-Siwe disease of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
202.54	Letterer-Siwe disease of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
202.55	Letterer-Siwe disease of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
202.56	Letterer-Siwe disease of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
202.57	Letterer-Siwe disease of spleen	ICD-9-CM	Diagnosis
202.58	Letterer-Siwe disease of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
202.6	Malignant mast cell tumors	ICD-9-CM	Diagnosis
202.60	Malignant mast cell tumors, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
202.61	Malignant mast cell tumors of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
202.62	Malignant mast cell tumors of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
202.63	Malignant mast cell tumors of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
202.64	Malignant mast cell tumors of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
202.65	Malignant mast cell tumors of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
202.66	Malignant mast cell tumors of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
202.67	Malignant mast cell tumors of spleen	ICD-9-CM	Diagnosis
202.68	Malignant mast cell tumors of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
202.7	Peripheral T-cell lymphoma	ICD-9-CM	Diagnosis
202.70	Peripheral T-cell lymphoma, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
202.71	Peripheral T-cell lymphoma, lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
202.72	Peripheral T-cell lymphoma, intrathoracic lymph nodes	ICD-9-CM	Diagnosis
202.73	Peripheral T-cell lymphoma, intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
202.74	Peripheral T-cell lymphoma, lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
202.75	Peripheral T-cell lymphoma, lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
202.76	Peripheral T-cell lymphoma, intrapelvic lymph nodes	ICD-9-CM	Diagnosis
202.77	Peripheral T-cell lymphoma, spleen	ICD-9-CM	Diagnosis
202.78	Peripheral T-cell lymphoma, lymph nodes of multiple sites	ICD-9-CM	Diagnosis
202.8	Other malignant lymphomas	ICD-9-CM	Diagnosis
202.80	Other malignant lymphomas, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
202.81	Other malignant lymphomas of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
202.82	Other malignant lymphomas of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
202.83	Other malignant lymphomas of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
202.84	Other malignant lymphomas of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis
202.85	Other malignant lymphomas of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
202.86	Other malignant lymphomas of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
202.87	Other malignant lymphomas of spleen	ICD-9-CM	Diagnosis
202.88	Other malignant lymphomas of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
202.9	Other and unspecified malignant neoplasms of lymphoid and histiocytic tissue	ICD-9-CM	Diagnosis
202.90	Other and unspecified malignant neoplasms of lymphoid and histiocytic tissue, unspecified site, extranodal and solid organ sites	ICD-9-CM	Diagnosis
202.91	Other and unspecified malignant neoplasms of lymphoid and histiocytic tissue of lymph nodes of head, face, and neck	ICD-9-CM	Diagnosis
202.92	Other and unspecified malignant neoplasms of lymphoid and histiocytic tissue of intrathoracic lymph nodes	ICD-9-CM	Diagnosis
202.93	Other and unspecified malignant neoplasms of lymphoid and histiocytic tissue of intra-abdominal lymph nodes	ICD-9-CM	Diagnosis
202.94	Other and unspecified malignant neoplasms of lymphoid and histiocytic tissue of lymph nodes of axilla and upper limb	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
202.95	Other and unspecified malignant neoplasms of lymphoid and histiocytic tissue of lymph nodes of inguinal region and lower limb	ICD-9-CM	Diagnosis
202.96	Other and unspecified malignant neoplasms of lymphoid and histiocytic tissue of intrapelvic lymph nodes	ICD-9-CM	Diagnosis
202.97	Other and unspecified malignant neoplasms of lymphoid and histiocytic tissue of spleen	ICD-9-CM	Diagnosis
202.98	Other and unspecified malignant neoplasms of lymphoid and histiocytic tissue of lymph nodes of multiple sites	ICD-9-CM	Diagnosis
203	Multiple myeloma and immunoproliferative neoplasms	ICD-9-CM	Diagnosis
203.0	Multiple myeloma	ICD-9-CM	Diagnosis
203.00	Multiple myeloma, without mention of having achieved remission	ICD-9-CM	Diagnosis
203.01	Multiple myeloma in remission	ICD-9-CM	Diagnosis
203.02	Multiple myeloma, in relapse	ICD-9-CM	Diagnosis
203.1	Plasma cell leukemia	ICD-9-CM	Diagnosis
203.10	Plasma cell leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
203.11	Plasma cell leukemia in remission	ICD-9-CM	Diagnosis
203.12	Plasma cell leukemia, in relapse	ICD-9-CM	Diagnosis
203.8	Other immunoproliferative neoplasms	ICD-9-CM	Diagnosis
203.80	Other immunoproliferative neoplasms, without mention of having achieved remission	ICD-9-CM	Diagnosis
203.81	Other immunoproliferative neoplasms in remission	ICD-9-CM	Diagnosis
203.82	Other immunoproliferative neoplasms, in relapse	ICD-9-CM	Diagnosis
204	Lymphoid leukemia	ICD-9-CM	Diagnosis
204.0	Acute lymphoid leukemia	ICD-9-CM	Diagnosis
204.00	Acute lymphoid leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
204.01	Acute lymphoid leukemia in remission	ICD-9-CM	Diagnosis
204.02	Acute lymphoid leukemia, in relapse	ICD-9-CM	Diagnosis
204.1	Chronic lymphoid leukemia	ICD-9-CM	Diagnosis
204.10	Chronic lymphoid leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
204.11	Chronic lymphoid leukemia in remission	ICD-9-CM	Diagnosis
204.12	Chronic lymphoid leukemia, in relapse	ICD-9-CM	Diagnosis
204.2	Subacute lymphoid leukemia	ICD-9-CM	Diagnosis
204.20	Subacute lymphoid leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
204.21	Subacute lymphoid leukemia in remission	ICD-9-CM	Diagnosis
204.22	Subacute lymphoid leukemia, in relapse	ICD-9-CM	Diagnosis
204.8	Other lymphoid leukemia	ICD-9-CM	Diagnosis
204.80	Other lymphoid leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
204.81	Other lymphoid leukemia in remission	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
204.82	Other lymphoid leukemia, in relapse	ICD-9-CM	Diagnosis
204.9	Unspecified lymphoid leukemia	ICD-9-CM	Diagnosis
204.90	Unspecified lymphoid leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
204.91	Unspecified lymphoid leukemia in remission	ICD-9-CM	Diagnosis
204.92	Unspecified lymphoid leukemia, in relapse	ICD-9-CM	Diagnosis
205	Myeloid leukemia	ICD-9-CM	Diagnosis
205.0	Acute myeloid leukemia	ICD-9-CM	Diagnosis
205.00	Acute myeloid leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
205.01	Acute myeloid leukemia in remission	ICD-9-CM	Diagnosis
205.02	Acute myeloid leukemia, in relapse	ICD-9-CM	Diagnosis
205.1	Chronic myeloid leukemia	ICD-9-CM	Diagnosis
205.10	Chronic myeloid leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
205.11	Chronic myeloid leukemia in remission	ICD-9-CM	Diagnosis
205.12	Chronic myeloid leukemia, in relapse	ICD-9-CM	Diagnosis
205.2	Subacute myeloid leukemia	ICD-9-CM	Diagnosis
205.20	Subacute myeloid leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
205.21	Subacute myeloid leukemia in remission	ICD-9-CM	Diagnosis
205.22	Subacute myeloid leukemia, in relapse	ICD-9-CM	Diagnosis
205.3	Myeloid sarcoma	ICD-9-CM	Diagnosis
205.30	Myeloid sarcoma, without mention of having achieved remission	ICD-9-CM	Diagnosis
205.31	Myeloid sarcoma in remission	ICD-9-CM	Diagnosis
205.32	Myeloid sarcoma, in relapse	ICD-9-CM	Diagnosis
205.8	Other myeloid leukemia	ICD-9-CM	Diagnosis
205.80	Other myeloid leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
205.81	Other myeloid leukemia in remission	ICD-9-CM	Diagnosis
205.82	Other myeloid leukemia, in relapse	ICD-9-CM	Diagnosis
205.9	Unspecified myeloid leukemia	ICD-9-CM	Diagnosis
205.90	Unspecified myeloid leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
205.91	Unspecified myeloid leukemia in remission	ICD-9-CM	Diagnosis
205.92	Unspecified myeloid leukemia, in relapse	ICD-9-CM	Diagnosis
206	Monocytic leukemia	ICD-9-CM	Diagnosis
206.0	Acute monocytic leukemia	ICD-9-CM	Diagnosis
206.00	Acute monocytic leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
206.01	Acute monocytic leukemia in remission	ICD-9-CM	Diagnosis
206.02	Acute monocytic leukemia, in relapse	ICD-9-CM	Diagnosis
206.1	Chronic monocytic leukemia	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
206.10	Chronic monocytic leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
206.11	Chronic monocytic leukemia in remission	ICD-9-CM	Diagnosis
206.12	Chronic monocytic leukemia, in relapse	ICD-9-CM	Diagnosis
206.2	Subacute monocytic leukemia	ICD-9-CM	Diagnosis
206.20	Subacute monocytic leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
206.21	Subacute monocytic leukemia in remission	ICD-9-CM	Diagnosis
206.22	Subacute monocytic leukemia, in relapse	ICD-9-CM	Diagnosis
206.8	Other monocytic leukemia	ICD-9-CM	Diagnosis
206.80	Other monocytic leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
206.81	Other monocytic leukemia in remission	ICD-9-CM	Diagnosis
206.82	Other monocytic leukemia, in relapse	ICD-9-CM	Diagnosis
206.9	Unspecified monocytic leukemia	ICD-9-CM	Diagnosis
206.90	Unspecified monocytic leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
206.91	Unspecified monocytic leukemia in remission	ICD-9-CM	Diagnosis
206.92	Unspecified monocytic leukemia, in relapse	ICD-9-CM	Diagnosis
207	Other specified leukemia	ICD-9-CM	Diagnosis
207.0	Acute erythremia and erythroleukemia	ICD-9-CM	Diagnosis
207.00	Acute erythremia and erythroleukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
207.01	Acute erythremia and erythroleukemia in remission	ICD-9-CM	Diagnosis
207.02	Acute erythremia and erythroleukemia, in relapse	ICD-9-CM	Diagnosis
207.1	Chronic erythremia	ICD-9-CM	Diagnosis
207.10	Chronic erythremia, without mention of having achieved remission	ICD-9-CM	Diagnosis
207.11	Chronic erythremia in remission	ICD-9-CM	Diagnosis
207.12	Chronic erythremia, in relapse	ICD-9-CM	Diagnosis
207.2	Megakaryocytic leukemia	ICD-9-CM	Diagnosis
207.20	Megakaryocytic leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
207.21	Megakaryocytic leukemia in remission	ICD-9-CM	Diagnosis
207.22	Megakaryocytic leukemia, in relapse	ICD-9-CM	Diagnosis
207.8	Other specified leukemia	ICD-9-CM	Diagnosis
207.80	Other specified leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
207.81	Other specified leukemia in remission	ICD-9-CM	Diagnosis
207.82	Other specified leukemia, in relapse	ICD-9-CM	Diagnosis
208	Leukemia of unspecified cell type	ICD-9-CM	Diagnosis
208.0	Acute leukemia of unspecified cell type	ICD-9-CM	Diagnosis
208.00	Acute leukemia of unspecified cell type, without mention of having achieved remission	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
208.01	Acute leukemia of unspecified cell type in remission	ICD-9-CM	Diagnosis
208.02	Acute leukemia of unspecified cell type, in relapse	ICD-9-CM	Diagnosis
208.1	Chronic leukemia of unspecified cell type	ICD-9-CM	Diagnosis
208.10	Chronic leukemia of unspecified cell type, without mention of having achieved remission	ICD-9-CM	Diagnosis
208.11	Chronic leukemia of unspecified cell type in remission	ICD-9-CM	Diagnosis
208.12	Chronic leukemia of unspecified cell type, in relapse	ICD-9-CM	Diagnosis
208.2	Subacute leukemia of unspecified cell type	ICD-9-CM	Diagnosis
208.20	Subacute leukemia of unspecified cell type, without mention of having achieved remission	ICD-9-CM	Diagnosis
208.21	Subacute leukemia of unspecified cell type in remission	ICD-9-CM	Diagnosis
208.22	Subacute leukemia of unspecified cell type, in relapse	ICD-9-CM	Diagnosis
208.8	Other leukemia of unspecified cell type	ICD-9-CM	Diagnosis
208.80	Other leukemia of unspecified cell type, without mention of having achieved remission	ICD-9-CM	Diagnosis
208.81	Other leukemia of unspecified cell type in remission	ICD-9-CM	Diagnosis
208.82	Other leukemia of unspecified cell type, in relapse	ICD-9-CM	Diagnosis
208.9	Unspecified leukemia	ICD-9-CM	Diagnosis
208.90	Unspecified leukemia, without mention of having achieved remission	ICD-9-CM	Diagnosis
208.91	Unspecified leukemia in remission	ICD-9-CM	Diagnosis
208.92	Unspecified leukemia, in relapse	ICD-9-CM	Diagnosis
209	Neuroendocrine tumors	ICD-9-CM	Diagnosis
209.0	Malignant carcinoid tumors of the small intestine	ICD-9-CM	Diagnosis
209.00	Malignant carcinoid tumor of the small intestine, unspecified portion	ICD-9-CM	Diagnosis
209.01	Malignant carcinoid tumor of the duodenum	ICD-9-CM	Diagnosis
209.02	Malignant carcinoid tumor of the jejunum	ICD-9-CM	Diagnosis
209.03	Malignant carcinoid tumor of the ileum	ICD-9-CM	Diagnosis
209.1	Malignant carcinoid tumors of the appendix, large intestine, and rectum	ICD-9-CM	Diagnosis
209.10	Malignant carcinoid tumor of the large intestine, unspecified portion	ICD-9-CM	Diagnosis
209.11	Malignant carcinoid tumor of the appendix	ICD-9-CM	Diagnosis
209.12	Malignant carcinoid tumor of the cecum	ICD-9-CM	Diagnosis
209.13	Malignant carcinoid tumor of the ascending colon	ICD-9-CM	Diagnosis
209.14	Malignant carcinoid tumor of the transverse colon	ICD-9-CM	Diagnosis
209.15	Malignant carcinoid tumor of the descending colon	ICD-9-CM	Diagnosis
209.16	Malignant carcinoid tumor of the sigmoid colon	ICD-9-CM	Diagnosis
209.17	Malignant carcinoid tumor of the rectum	ICD-9-CM	Diagnosis
209.2	Malignant carcinoid tumors of other and unspecified sites	ICD-9-CM	Diagnosis
209.20	Malignant carcinoid tumor of unknown primary site	ICD-9-CM	Diagnosis
209.21	Malignant carcinoid tumor of the bronchus and lung	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
209.22	Malignant carcinoid tumor of the thymus	ICD-9-CM	Diagnosis
209.23	Malignant carcinoid tumor of the stomach	ICD-9-CM	Diagnosis
209.24	Malignant carcinoid tumor of the kidney	ICD-9-CM	Diagnosis
209.25	Malignant carcinoid tumor of foregut, not otherwise specified	ICD-9-CM	Diagnosis
209.26	Malignant carcinoid tumor of midgut, not otherwise specified	ICD-9-CM	Diagnosis
209.27	Malignant carcinoid tumor of hindgut, not otherwise specified	ICD-9-CM	Diagnosis
209.29	Malignant carcinoid tumor of other sites	ICD-9-CM	Diagnosis
209.3	Malignant poorly differentiated neuroendocrine tumors	ICD-9-CM	Diagnosis
209.30	Malignant poorly differentiated neuroendocrine carcinoma, any site	ICD-9-CM	Diagnosis
209.31	Merkel cell carcinoma of the face	ICD-9-CM	Diagnosis
209.32	Merkel cell carcinoma of the scalp and neck	ICD-9-CM	Diagnosis
209.33	Merkel cell carcinoma of the upper limb	ICD-9-CM	Diagnosis
209.34	Merkel cell carcinoma of the lower limb	ICD-9-CM	Diagnosis
209.35	Merkel cell carcinoma of the trunk	ICD-9-CM	Diagnosis
209.36	Merkel cell carcinoma of other sites	ICD-9-CM	Diagnosis
209.7	Secondary neuroendocrine tumors	ICD-9-CM	Diagnosis
209.70	Secondary neuroendocrine tumor, unspecified site	ICD-9-CM	Diagnosis
209.71	Secondary neuroendocrine tumor of distant lymph nodes	ICD-9-CM	Diagnosis
209.72	Secondary neuroendocrine tumor of liver	ICD-9-CM	Diagnosis
209.73	Secondary neuroendocrine tumor of bone	ICD-9-CM	Diagnosis
209.74	Secondary neuroendocrine tumor of peritoneum	ICD-9-CM	Diagnosis
209.75	Secondary Merkel cell carcinoma	ICD-9-CM	Diagnosis
209.79	Secondary neuroendocrine tumor of other sites	ICD-9-CM	Diagnosis
<b>Chronic Kidney Disease (Excluding End Stage Renal Disease)</b>			
585.1	Chronic kidney disease, Stage I	ICD-9-CM	Diagnosis
585.2	Chronic kidney disease, Stage II (mild)	ICD-9-CM	Diagnosis
585.3	Chronic kidney disease, Stage III (moderate)	ICD-9-CM	Diagnosis
585.4	Chronic kidney disease, Stage IV (severe)	ICD-9-CM	Diagnosis
G0420	Face-to-face educational services related to the care of chronic kidney disease; individual, per session, per one hour	HCPCS	Procedure
G0421	Face-to-face educational services related to the care of chronic kidney disease; group, per session, per one hour	HCPCS	Procedure
G8487	I intend to report the chronic kidney disease (CKD) measures group	HCPCS	Procedure
G8771	Documentation of diagnosis of chronic kidney disease	HCPCS	Procedure
<b>Chronic Obstructive Pulmonary Disease</b>			
491	Chronic bronchitis	ICD-9-CM	Diagnosis
491.0	Simple chronic bronchitis	ICD-9-CM	Diagnosis
491.1	Mucopurulent chronic bronchitis	ICD-9-CM	Diagnosis
491.2	Obstructive chronic bronchitis	ICD-9-CM	Diagnosis
491.20	Obstructive chronic bronchitis, without exacerbation	ICD-9-CM	Diagnosis
491.21	Obstructive chronic bronchitis, with (acute) exacerbation	ICD-9-CM	Diagnosis
491.22	Obstructive chronic bronchitis with acute bronchitis	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
491.8	Other chronic bronchitis	ICD-9-CM	Diagnosis
491.9	Unspecified chronic bronchitis	ICD-9-CM	Diagnosis
492	Emphysema	ICD-9-CM	Diagnosis
492.0	Emphysematous bleb	ICD-9-CM	Diagnosis
492.8	Other emphysema	ICD-9-CM	Diagnosis
496	Chronic airway obstruction, not elsewhere classified	ICD-9-CM	Diagnosis
<b>Dementia</b>			
290.0	Senile dementia, uncomplicated	ICD-9-CM	Diagnosis
290.1	Presenile dementia	ICD-9-CM	Diagnosis
290.10	Presenile dementia, uncomplicated	ICD-9-CM	Diagnosis
290.11	Presenile dementia with delirium	ICD-9-CM	Diagnosis
290.12	Presenile dementia with delusional features	ICD-9-CM	Diagnosis
290.13	Presenile dementia with depressive features	ICD-9-CM	Diagnosis
290.2	Senile dementia with delusional or depressive features	ICD-9-CM	Diagnosis
290.20	Senile dementia with delusional features	ICD-9-CM	Diagnosis
290.21	Senile dementia with depressive features	ICD-9-CM	Diagnosis
290.3	Senile dementia with delirium	ICD-9-CM	Diagnosis
290.4	Vascular dementia	ICD-9-CM	Diagnosis
290.40	Vascular dementia, uncomplicated	ICD-9-CM	Diagnosis
290.41	Vascular dementia, with delirium	ICD-9-CM	Diagnosis
290.42	Vascular dementia, with delusions	ICD-9-CM	Diagnosis
290.43	Vascular dementia, with depressed mood	ICD-9-CM	Diagnosis
291.2	Alcohol-induced persisting dementia	ICD-9-CM	Diagnosis
292.82	Drug-induced persisting dementia	ICD-9-CM	Diagnosis
294.0	Amnestic disorder in conditions classified elsewhere	ICD-9-CM	Diagnosis
294.1	Dementia in conditions classified elsewhere	ICD-9-CM	Diagnosis
294.10	Dementia in conditions classified elsewhere without behavioral disturbance	ICD-9-CM	Diagnosis
294.11	Dementia in conditions classified elsewhere with behavioral disturbance	ICD-9-CM	Diagnosis
294.8	Other persistent mental disorders due to conditions classified elsewhere	ICD-9-CM	Diagnosis
331.0	Alzheimer's disease	ICD-9-CM	Diagnosis
331.1	Frontotemporal dementia	ICD-9-CM	Diagnosis
331.11	Pick's disease	ICD-9-CM	Diagnosis
331.19	Other frontotemporal dementia	ICD-9-CM	Diagnosis
331.2	Senile degeneration of brain	ICD-9-CM	Diagnosis
331.7	Cerebral degeneration in diseases classified elsewhere	ICD-9-CM	Diagnosis
331.8	Other cerebral degeneration	ICD-9-CM	Diagnosis
331.81	Reye's syndrome	ICD-9-CM	Diagnosis
331.82	Dementia with Lewy bodies	ICD-9-CM	Diagnosis
331.83	Mild cognitive impairment, so stated	ICD-9-CM	Diagnosis
331.89	Other cerebral degeneration	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
331.9	Unspecified cerebral degeneration	ICD-9-CM	Diagnosis
797	Senility without mention of psychosis	ICD-9-CM	Diagnosis
<b>Depression</b>			
296.2	Major depressive disorder, single episode	ICD-9-CM	Diagnosis
296.20	Major depressive disorder, single episode, unspecified	ICD-9-CM	Diagnosis
296.21	Major depressive disorder, single episode, mild	ICD-9-CM	Diagnosis
296.22	Major depressive disorder, single episode, moderate	ICD-9-CM	Diagnosis
296.23	Major depressive disorder, single episode, severe, without mention of psychotic behavior	ICD-9-CM	Diagnosis
296.24	Major depressive disorder, single episode, severe, specified as with psychotic behavior	ICD-9-CM	Diagnosis
296.25	Major depressive disorder, single episode, in partial or unspecified remission	ICD-9-CM	Diagnosis
296.26	Major depressive disorder, single episode in full remission	ICD-9-CM	Diagnosis
296.3	Major depressive disorder, recurrent episode	ICD-9-CM	Diagnosis
296.30	Major depressive disorder, recurrent episode, unspecified	ICD-9-CM	Diagnosis
296.31	Major depressive disorder, recurrent episode, mild	ICD-9-CM	Diagnosis
296.32	Major depressive disorder, recurrent episode, moderate	ICD-9-CM	Diagnosis
296.33	Major depressive disorder, recurrent episode, severe, without mention of psychotic behavior	ICD-9-CM	Diagnosis
296.34	Major depressive disorder, recurrent episode, severe, specified as with psychotic behavior	ICD-9-CM	Diagnosis
296.35	Major depressive disorder, recurrent episode, in partial or unspecified remission	ICD-9-CM	Diagnosis
296.36	Major depressive disorder, recurrent episode, in full remission	ICD-9-CM	Diagnosis
300.4	Dysthymic disorder	ICD-9-CM	Diagnosis
311	Depressive disorder, not elsewhere classified	ICD-9-CM	Diagnosis
<b>End Stage Renal Disease</b>			
36145	Introduction of needle or intracatheter; arteriovenous shunt created for dialysis (cannula, fistula, or graft)	CPT-4	Procedure
36800	Insertion of cannula for hemodialysis, other purpose (separate procedure); vein to vein	CPT-4	Procedure
36810	Insertion of cannula for hemodialysis, other purpose (separate procedure); arteriovenous, external (Scribner type)	CPT-4	Procedure
36815	Insertion of cannula for hemodialysis, other purpose (separate procedure); arteriovenous, external revision, or closure	CPT-4	Procedure
36825	Creation of arteriovenous fistula by other than direct arteriovenous anastomosis (separate procedure); autogenous graft	CPT-4	Procedure
36830	Creation of arteriovenous fistula by other than direct arteriovenous anastomosis (separate procedure); nonautogenous graft (eg, biological collagen, thermoplastic graft)	CPT-4	Procedure

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
36831	Thrombectomy, open, arteriovenous fistula without revision, autogenous or nonautogenous dialysis graft (separate procedure)	CPT-4	Procedure
36832	Revision, open, arteriovenous fistula; without thrombectomy, autogenous or nonautogenous dialysis graft (separate procedure)	CPT-4	Procedure
36833	Revision, open, arteriovenous fistula; with thrombectomy, autogenous or nonautogenous dialysis graft (separate procedure)	CPT-4	Procedure
38.95	Venous catheterization for renal dialysis	ICD-9-CM	Procedure
39.27	Arteriovenostomy for renal dialysis	ICD-9-CM	Procedure
39.42	Revision of arteriovenous shunt for renal dialysis	ICD-9-CM	Procedure
39.43	Removal of arteriovenous shunt for renal dialysis	ICD-9-CM	Procedure
39.53	Repair of arteriovenous fistula	ICD-9-CM	Procedure
39.93	Insertion of vessel-to-vessel cannula	ICD-9-CM	Procedure
39.94	Replacement of vessel-to-vessel cannula	ICD-9-CM	Procedure
39.95	Hemodialysis	ICD-9-CM	Procedure
458.21	Hypotension of hemodialysis	ICD-9-CM	Diagnosis
50323	Backbench standard preparation of cadaver donor renal allograft prior to transplantation, including dissection and removal of perinephric fat, diaphragmatic and retroperitoneal attachments, excision of adrenal gland, and preparation of ureter(s), renal vein(s), and renal artery(s), ligating branches, as necessary	CPT-4	Procedure
50325	Backbench standard preparation of living donor renal allograft (open or laparoscopic) prior to transplantation, including dissection and removal of perinephric fat and preparation of ureter(s), renal vein(s), and renal artery(s), ligating branches, as necessary	CPT-4	Procedure
50327	Backbench reconstruction of cadaver or living donor renal allograft prior to transplantation; venous anastomosis, each	CPT-4	Procedure
50328	Backbench reconstruction of cadaver or living donor renal allograft prior to transplantation; arterial anastomosis, each	CPT-4	Procedure
50329	Backbench reconstruction of cadaver or living donor renal allograft prior to transplantation; ureteral anastomosis, each	CPT-4	Procedure
50340	Recipient nephrectomy (separate procedure)	CPT-4	Procedure
50341	Recipient Nephrectomy (separate Procedure)	CPT-4	Procedure
50360	Renal allotransplantation, implantation of graft; without recipient nephrectomy	CPT-4	Procedure
50365	Renal allotransplantation, implantation of graft; with recipient nephrectomy	CPT-4	Procedure
50366	Renal Homotransplantation, Implantation Of Graft	CPT-4	Procedure
54.98	Peritoneal dialysis	ICD-9-CM	Procedure
55.6	Transplant of kidney	ICD-9-CM	Procedure
55.61	Renal autotransplantation	ICD-9-CM	Procedure
55.69	Other kidney transplantation	ICD-9-CM	Procedure
585.5	Chronic kidney disease, Stage V	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
585.6	End stage renal disease	ICD-9-CM	Diagnosis
90918	End-stage renal disease (ESRD) related services per full month; for patients younger than two years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents	CPT-4	Procedure
90919	End-stage renal disease (ESRD) related services per full month; for patients between two and eleven years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents	CPT-4	Procedure
90920	End-stage renal disease (ESRD) related services per full month; for patients between twelve and nineteen years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents	CPT-4	Procedure
90921	End-stage renal disease (ESRD) related services per full month; for patients twenty years of age and older	CPT-4	Procedure
90922	End-stage renal disease (ESRD) related services (less than full month), per day; for patients younger than two years of age	CPT-4	Procedure
90923	End-stage renal disease (ESRD) related services (less than full month), per day; for patients between two and eleven years of age	CPT-4	Procedure
90924	End-stage renal disease (ESRD) related services (less than full month), per day; for patients between twelve and nineteen years of age	CPT-4	Procedure
90925	End-stage renal disease (ESRD) related services (less than full month), per day; for patients twenty years of age and older	CPT-4	Procedure
90935	Hemodialysis procedure with single evaluation by a physician or other qualified health care professional	CPT-4	Procedure
90937	Hemodialysis procedure requiring repeated evaluation(s) with or without substantial revision of dialysis prescription	CPT-4	Procedure
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	CPT-4	Procedure
90940	Hemodialysis access flow study to determine blood flow in grafts and arteriovenous fistulae by an indicator method	CPT-4	Procedure
90941	Hemodialysis, For Acute Renal Failure And Or Intoxication,	CPT-4	Procedure
90942	Hemodialysis, For Acute Renal Failure And Or Intoxication,	CPT-4	Procedure
90943	Hemodialysis, For Acute Renal Failure And Or Intoxication,	CPT-4	Procedure
90944	Hemodialysis, For Acute Renal Failure And Or Intoxication,	CPT-4	Procedure
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	CPT-4	Procedure

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
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	CPT-4	Procedure
90951	End-stage renal disease (ESRD) related services monthly, for patients younger than 2 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 4 or more face-to-face visits by a physician or other qualified health care professional per month	CPT-4	Procedure
90952	End-stage renal disease (ESRD) related services monthly, for patients younger than 2 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 2-3 face-to-face visits by a physician or other qualified health care professional per month	CPT-4	Procedure
90953	End-stage renal disease (ESRD) related services monthly, for patients younger than 2 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 1 face-to-face visit by a physician or other qualified health care professional per month	CPT-4	Procedure
90954	End-stage renal disease (ESRD) related services monthly, for patients 2-11 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 4 or more face-to-face visits by a physician or other qualified health care professional per month	CPT-4	Procedure
90955	End-stage renal disease (ESRD) related services monthly, for patients 2-11 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 2-3 face-to-face visits by a physician or other qualified health care professional per month	CPT-4	Procedure
90956	End-stage renal disease (ESRD) related services monthly, for patients 2-11 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 1 face-to-face visit by a physician or other qualified health care professional per month	CPT-4	Procedure
90957	End-stage renal disease (ESRD) related services monthly, for patients 12-19 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 4 or more face-to-face visits by a physician or other qualified health care professional per month	CPT-4	Procedure

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
90958	End-stage renal disease (ESRD) related services monthly, for patients 12-19 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 2-3 face-to-face visits by a physician or other qualified health care professional per month	CPT-4	Procedure
90959	End-stage renal disease (ESRD) related services monthly, for patients 12-19 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 1 face-to-face visit by a physician or other qualified health care professional per month	CPT-4	Procedure
90960	End-stage renal disease (ESRD) related services monthly, for patients 20 years of age and older; with 4 or more face-to-face visits by a physician or other qualified health care professional per month	CPT-4	Procedure
90961	End-stage renal disease (ESRD) related services monthly, for patients 20 years of age and older; with 2-3 face-to-face visits by a physician or other qualified health care professional per month	CPT-4	Procedure
90962	End-stage renal disease (ESRD) related services monthly, for patients 20 years of age and older; with 1 face-to-face visit by a physician or other qualified health care professional per month	CPT-4	Procedure
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	CPT-4	Procedure
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	CPT-4	Procedure
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	CPT-4	Procedure
90966	End-stage renal disease (ESRD) related services for home dialysis per full month, for patients 20 years of age and older	CPT-4	Procedure
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	CPT-4	Procedure
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	CPT-4	Procedure
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	CPT-4	Procedure

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
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	CPT-4	Procedure
90976	Peritoneal Dialysis For End-stage Renal Disease (esrd),	CPT-4	Procedure
90977	Peritoneal Dialysis For End-stage Renal Disease (esrd),	CPT-4	Procedure
90978	Peritoneal Dialysis For End-stage Renal Disease (esrd),	CPT-4	Procedure
90979	Peritoneal Dialysis For End-stage Renal Disease (esrd),	CPT-4	Procedure
90982	Peritoneal Dialysis For End-stage Renal Disease (esrd),	CPT-4	Procedure
90983	Peritoneal Dialysis For End-stage Renal Disease (esrd),	CPT-4	Procedure
90984	Peritoneal Dialysis For End-stage Renal Disease (esrd),	CPT-4	Procedure
90985	Peritoneal Dialysis For End-stage Renal Disease (esrd),	CPT-4	Procedure
90989	Dialysis training, patient, including helper where applicable, any mode, completed course	CPT-4	Procedure
90993	Dialysis training, patient, including helper where applicable, any mode, course not completed, per training session	CPT-4	Procedure
90995	End Stage Renal Disease (esrd) Related Services, Per Full Month	CPT-4	Procedure
90996	Continuous Arteriovenous Hemofiltration (cavh) (per Day)	CPT-4	Procedure
90997	Hemoperfusion (eg, with activated charcoal or resin)	CPT-4	Procedure
90998	End Stage Renal Disease (esrd) Related Services (less Than Full Month), Per Day	CPT-4	Procedure
90999	Unlisted dialysis procedure, inpatient or outpatient	CPT-4	Procedure
93990	Duplex scan of hemodialysis access (including arterial inflow, body of access and venous outflow)	CPT-4	Procedure
99512	Home visit for hemodialysis	CPT-4	Procedure
996.56	Mechanical complications due to peritoneal dialysis catheter	ICD-9-CM	Diagnosis
996.68	Infection and inflammatory reaction due to peritoneal dialysis catheter	ICD-9-CM	Diagnosis
996.73	Other complications due to renal dialysis device, implant, and graft	ICD-9-CM	Diagnosis
A4653	Peritoneal dialysis catheter anchoring device, belt, each	HCPCS	Procedure
A4656	Needle, any size, each	HCPCS	Procedure
A4657	Syringe, with or without needle, each	HCPCS	Procedure
A4670	Automatic blood pressure monitor	HCPCS	Procedure
A4671	Disposable cyler set used with cyler dialysis machine, each	HCPCS	Procedure
A4672	Drainage extension line, sterile, for dialysis, each	HCPCS	Procedure
A4673	Extension line with easy lock connectors, used with dialysis	HCPCS	Procedure
A4674	Chemicals/antiseptics solution used to clean/sterilize dialysis equipment, per 8 oz	HCPCS	Procedure
A4680	Activated carbon filter for hemodialysis, each	HCPCS	Procedure
A4706	Bicarbonate concentrate, solution, for hemodialysis, per gallon	HCPCS	Procedure
A4707	Bicarbonate concentrate, powder, for hemodialysis, per packet	HCPCS	Procedure
A4708	Acetate concentrate solution, for hemodialysis, per gallon	HCPCS	Procedure
A4709	Acid concentrate, solution, for hemodialysis, per gallon	HCPCS	Procedure
A4712	Water, sterile, for injection, per 10 ml	HCPCS	Procedure

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
A4714	Treated water (deionized, distilled, or reverse osmosis) for peritoneal dialysis, per gallon	HCPCS	Procedure
A4719	"Y set" tubing for peritoneal dialysis	HCPCS	Procedure
A4720	Dialysate solution, any concentration of dextrose, fluid volume greater than 249 cc, but less than or equal to 999 cc, for peritoneal dialysis	HCPCS	Procedure
A4721	Dialysate solution, any concentration of dextrose, fluid volume greater than 999 cc but less than or equal to 1999 cc, for peritoneal dialysis	HCPCS	Procedure
A4722	Dialysate solution, any concentration of dextrose, fluid volume greater than 1999 cc but less than or equal to 2999 cc, for peritoneal dialysis	HCPCS	Procedure
A4723	Dialysate solution, any concentration of dextrose, fluid volume greater than 2999 cc but less than or equal to 3999 cc, for peritoneal dialysis	HCPCS	Procedure
A4724	Dialysate solution, any concentration of dextrose, fluid volume greater than 3999 cc but less than or equal to 4999 cc, for peritoneal dialysis	HCPCS	Procedure
A4725	Dialysate solution, any concentration of dextrose, fluid volume greater than 4999 cc but less than or equal to 5999 cc, for peritoneal dialysis	HCPCS	Procedure
A4726	Dialysate solution, any concentration of dextrose, fluid volume greater than 5999 cc, for peritoneal dialysis	HCPCS	Procedure
A4728	Dialysate solution, nondextrose containing, 500 ml	HCPCS	Procedure
A4730	Fistula cannulation set for hemodialysis, each	HCPCS	Procedure
A4736	Topical anesthetic, for dialysis, per g	HCPCS	Procedure
A4737	Injectable anesthetic, for dialysis, per 10 ml	HCPCS	Procedure
A4740	Shunt accessory, for hemodialysis, any type, each	HCPCS	Procedure
A4750	Blood tubing, arterial or venous, for hemodialysis, each	HCPCS	Procedure
A4755	Blood tubing, arterial and venous combined, for hemodialysis, each	HCPCS	Procedure
A4760	Dialysate solution test kit, for peritoneal dialysis, any type, each	HCPCS	Procedure
A4765	Dialysate concentrate, powder, additive for peritoneal dialysis, per packet	HCPCS	Procedure
A4766	Dialysate concentrate, solution, additive for peritoneal dialysis, per 10 ml	HCPCS	Procedure
A4770	Blood collection tube, vacuum, for dialysis, per 50	HCPCS	Procedure
A4771	Serum clotting time tube, for dialysis, per 50	HCPCS	Procedure
A4773	Occult blood test strips, for dialysis, per 50	HCPCS	Procedure
A4774	Ammonia test strips, for dialysis, per 50	HCPCS	Procedure
A4802	Protamine sulfate, for hemodialysis, per 50 mg	HCPCS	Procedure
A4860	Disposable catheter tips for peritoneal dialysis, per 10	HCPCS	Procedure

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
A4870	Plumbing and/or electrical work for home hemodialysis equipment	HCPCS	Procedure
A4890	Contracts, repair and maintenance, for hemodialysis equipment	HCPCS	Procedure
A4911	Drain bag/bottle, for dialysis, each	HCPCS	Procedure
A4913	Miscellaneous dialysis supplies, not otherwise specified	HCPCS	Procedure
A4918	Venous pressure clamp, for hemodialysis, each	HCPCS	Procedure
A4928	Surgical mask, per 20	HCPCS	Procedure
A4929	Tourniquet for dialysis, each	HCPCS	Procedure
C1881	Dialysis access system (implantable)	HCPCS	Procedure
E1500	Centrifuge, for dialysis	HCPCS	Procedure
E1520	Heparin infusion pump for hemodialysis	HCPCS	Procedure
E1530	Air bubble detector for hemodialysis, each, replacement	HCPCS	Procedure
E1540	Pressure alarm for hemodialysis, each, replacement	HCPCS	Procedure
E1550	Bath conductivity meter for hemodialysis, each	HCPCS	Procedure
E1560	Blood leak detector for hemodialysis, each, replacement	HCPCS	Procedure
E1570	Adjustable chair, for ESRD patients	HCPCS	Procedure
E1575	Transducer protectors/fluid barriers, for hemodialysis, any size, per 10	HCPCS	Procedure
E1580	Unipuncture control system for hemodialysis	HCPCS	Procedure
E1600	Delivery and/or installation charges for hemodialysis equipment	HCPCS	Procedure
E1610	Reverse osmosis water purification system, for hemodialysis	HCPCS	Procedure
E1615	Deionizer water purification system, for hemodialysis	HCPCS	Procedure
E1620	Blood pump for hemodialysis, replacement	HCPCS	Procedure
E1625	Water softening system, for hemodialysis	HCPCS	Procedure
E1634	Peritoneal dialysis clamps, each	HCPCS	Procedure
E1635	Compact (portable) travel hemodialyzer system	HCPCS	Procedure
E1636	Sorbent cartridges, for hemodialysis, per 10	HCPCS	Procedure
E1637	Hemostats, each	HCPCS	Procedure
E1638	Heating pad, for peritoneal dialysis, any size, each	HCPCS	Procedure
E1639	Scale, each	HCPCS	Procedure
E1699	Dialysis equipment, not otherwise specified	HCPCS	Procedure
G0257	Unscheduled or emergency dialysis treatment for an ESRD patient in a hospital outpatient department that is not certified as an ESRD facility	HCPCS	Procedure
G0308	ESRD related services during the course of treatment, for patients under 2 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 4 or more face-to-face physician visits per month.	HCPCS	Procedure
G0309	ESRD related services during the course of treatment, for patients under 2 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 2 or 3 face-to-face physician visits per month.	HCPCS	Procedure

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
G0310	ESRD related services during the course of treatment, for patients under 2 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 1 face-to-face physician visit per month	HCPCS	Procedure
G0311	ESRD related services during the course of treatment, for patients between 2 and 11 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 4 or more face-to-face physician visits per month	HCPCS	Procedure
G0312	ESRD related services during the course of treatment, for patients between 2 and 11 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 2 or 3 face-to-face physician visits per month	HCPCS	Procedure
G0313	ESRD related services during the course of treatment, for patients between 2 and 11 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 1 face-to-face physician visit per month	HCPCS	Procedure
G0314	ESRD related services during the course of treatment, for patients between 12 and 19 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with 4 or more face-to-face physician visits per month	HCPCS	Procedure
G0315	End Stage Renal disease (ESRD) related services during the course of treatment, for patients between 12 and 19 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with two or three face-to-face physician visits per month	HCPCS	Procedure
G0316	End Stage Renal disease (ESRD) related services during the course of treatment, for patients between 12 and 19 years of age to include monitoring for the adequacy of nutrition, assessment of growth and development, and counseling of parents; with one face-to-face physician visit per month	HCPCS	Procedure
G0317	End Stage Renal disease (ESRD) related services during the course of treatment, for patients 20 years of age and over; with four or more face-to-face physician visits per month	HCPCS	Procedure
G0318	ESRD related services during the course of treatment, for patients 20 years of age and over; with 2 or 3 face-to-face physician visits per month	HCPCS	Procedure
G0319	End Stage Renal disease (ESRD) related services during the course of treatment, for patients 20 years of age and over; with one face-to-face physician visit per month	HCPCS	Procedure

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
G0320	ESRD related services for home dialysis patients per full month; for patients under 2 years of age to include monitoring for adequacy of nutrition, assessment of growth and development, and counseling of parents	HCPCS	Procedure
G0321	ESRD related services for home dialysis patients per full month; for patients 2 to 11 years of age to include monitoring for adequacy of nutrition, assessment of growth and development, and counseling of parents	HCPCS	Procedure
G0322	End Stage Renal disease (ESRD) related services for home dialysis patients per full month; for patients 12 to 19 years of age to include monitoring for adequacy of nutrition, assessment of growth and development, and counseling of parents	HCPCS	Procedure
G0323	End Stage Renal disease (ESRD) related services for home dialysis patients per full month; for patients 20 years of age and older	HCPCS	Procedure
G0324	ESRD related services for home dialysis (less than full month), per day; for patients under 2 years of age	HCPCS	Procedure
G0325	ESRD related services for home dialysis (less than full month), per day; for patients between 2 and 11 years of age	HCPCS	Procedure
G0326	ESRD related services for home dialysis (less than full month), per day; for patients between twelve and nineteen years of age	HCPCS	Procedure
G0327	ESRD related services for home dialysis (less than full month), per day; for patients twenty years of age and over	HCPCS	Procedure
G8727	Patient receiving hemodialysis, peritoneal dialysis or kidney transplantation	HCPCS	Procedure
G9013	ESRD demo basic bundle Level I	HCPCS	Procedure
G9014	ESRD demo expanded bundle including venous access and related services	HCPCS	Procedure
J0635	Injection, calcitriol, 1 mcg amp.	HCPCS	Procedure
J0636	Injection, calcitriol, 0.1 mcg	HCPCS	Procedure
S2065	Simultaneous pancreas kidney transplantation	HCPCS	Procedure
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	HCPCS	Procedure
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	HCPCS	Procedure
V42.0	Kidney replaced by transplant	ICD-9-CM	Diagnosis
V45.1	Renal dialysis status	ICD-9-CM	Diagnosis
V45.11	Renal dialysis status	ICD-9-CM	Diagnosis
V45.12	Noncompliance with renal dialysis	ICD-9-CM	Diagnosis
V56	Encounter for dialysis and dialysis catheter care	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
V56.0	Encounter for extracorporeal dialysis	ICD-9-CM	Diagnosis
V56.1	Fitting and adjustment of extracorporeal dialysis catheter	ICD-9-CM	Diagnosis
V56.2	Fitting and adjustment of peritoneal dialysis catheter	ICD-9-CM	Diagnosis
V56.3	Encounter for adequacy testing for dialysis	ICD-9-CM	Diagnosis
V56.31	Encounter for adequacy testing for hemodialysis	ICD-9-CM	Diagnosis
V56.32	Encounter for adequacy testing for peritoneal dialysis	ICD-9-CM	Diagnosis
V56.8	Encounter other dialysis	ICD-9-CM	Diagnosis
<b>Fracture</b>			
733.1	Pathologic fracture	ICD-9-CM	Diagnosis
733.10	Pathologic fracture, unspecified site	ICD-9-CM	Diagnosis
733.11	Pathologic fracture of humerus	ICD-9-CM	Diagnosis
733.12	Pathologic fracture of distal radius and ulna	ICD-9-CM	Diagnosis
733.13	Pathologic fracture of vertebrae	ICD-9-CM	Diagnosis
733.14	Pathologic fracture of neck of femur	ICD-9-CM	Diagnosis
733.15	Pathologic fracture of other specified part of femur	ICD-9-CM	Diagnosis
733.16	Pathologic fracture of tibia and fibula	ICD-9-CM	Diagnosis
733.19	Pathologic fracture of other specified site	ICD-9-CM	Diagnosis
733.93	Stress fracture of tibia or fibula	ICD-9-CM	Diagnosis
733.94	Stress fracture of the metatarsals	ICD-9-CM	Diagnosis
733.95	Stress fracture of other bone	ICD-9-CM	Diagnosis
733.96	Stress fracture of femoral neck	ICD-9-CM	Diagnosis
733.97	Stress fracture of shaft of femur	ICD-9-CM	Diagnosis
733.98	Stress fracture of pelvis	ICD-9-CM	Diagnosis
79.01	Closed reduction of fracture of humerus without internal fixation	ICD-9-CM	Procedure
79.02	Closed reduction of fracture of radius and ulna without internal fixation	ICD-9-CM	Procedure
79.03	Closed reduction of fracture of carpals and metacarpals without internal fixation	ICD-9-CM	Procedure
79.05	Closed reduction of fracture of femur without internal fixation	ICD-9-CM	Procedure
79.06	Closed reduction of fracture of tibia and fibula without internal fixation	ICD-9-CM	Procedure
79.07	Closed reduction of fracture of tarsals and metatarsals without internal fixation	ICD-9-CM	Procedure
79.11	Closed reduction of fracture of humerus with internal fixation	ICD-9-CM	Procedure
79.12	Closed reduction of fracture of radius and ulna with internal fixation	ICD-9-CM	Procedure
79.13	Closed reduction of fracture of carpals and metacarpals with internal fixation	ICD-9-CM	Procedure
79.15	Closed reduction of fracture of femur with internal fixation	ICD-9-CM	Procedure
79.16	Closed reduction of fracture of tibia and fibula with internal fixation	ICD-9-CM	Procedure
79.17	Closed reduction of fracture of tarsals and metatarsals with internal fixation	ICD-9-CM	Procedure

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
79.21	Open reduction of fracture of humerus without internal fixation	ICD-9-CM	Procedure
79.22	Open reduction of fracture of radius and ulna without internal fixation	ICD-9-CM	Procedure
79.23	Open reduction of fracture of carpals and metacarpals without internal fixation	ICD-9-CM	Procedure
79.25	Open reduction of fracture of femur without internal fixation	ICD-9-CM	Procedure
79.26	Open reduction of fracture of tibia and fibula without internal fixation	ICD-9-CM	Procedure
79.27	Open reduction of fracture of tarsals and metatarsals without internal fixation	ICD-9-CM	Procedure
79.31	Open reduction of fracture of humerus with internal fixation	ICD-9-CM	Procedure
79.32	Open reduction of fracture of radius and ulna with internal fixation	ICD-9-CM	Procedure
79.33	Open reduction of fracture of carpals and metacarpals with internal fixation	ICD-9-CM	Procedure
79.35	Open reduction of fracture of femur with internal fixation	ICD-9-CM	Procedure
79.36	Open reduction of fracture of tibia and fibula with internal fixation	ICD-9-CM	Procedure
79.37	Open reduction of fracture of tarsals and metatarsals with internal fixation	ICD-9-CM	Procedure
79.61	Debridement of open fracture of humerus	ICD-9-CM	Procedure
79.62	Debridement of open fracture of radius and ulna	ICD-9-CM	Procedure
79.63	Debridement of open fracture of carpals and metacarpals	ICD-9-CM	Procedure
79.65	Debridement of open fracture of femur	ICD-9-CM	Procedure
79.66	Debridement of open fracture of tibia and fibula	ICD-9-CM	Procedure
79.67	Debridement of open fracture of tarsals and metatarsals	ICD-9-CM	Procedure
805	Fracture of vertebral column without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.0	Closed fracture of cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.00	Closed fracture of cervical vertebra, unspecified level without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.01	Closed fracture of first cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.02	Closed fracture of second cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.03	Closed fracture of third cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.04	Closed fracture of fourth cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.05	Closed fracture of fifth cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.06	Closed fracture of sixth cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.07	Closed fracture of seventh cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
805.08	Closed fracture of multiple cervical vertebrae without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.1	Open fracture of cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.10	Open fracture of cervical vertebra, unspecified level without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.11	Open fracture of first cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.12	Open fracture of second cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.13	Open fracture of third cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.14	Open fracture of fourth cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.15	Open fracture of fifth cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.16	Open fracture of sixth cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.17	Open fracture of seventh cervical vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.18	Open fracture of multiple cervical vertebrae without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.2	Closed fracture of dorsal (thoracic) vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.3	Open fracture of dorsal (thoracic) vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.4	Closed fracture of lumbar vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.5	Open fracture of lumbar vertebra without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.6	Closed fracture of sacrum and coccyx without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.7	Open fracture of sacrum and coccyx without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.8	Closed fracture of unspecified part of vertebral column without mention of spinal cord injury	ICD-9-CM	Diagnosis
805.9	Open fracture of unspecified part of vertebral column without mention of spinal cord injury	ICD-9-CM	Diagnosis
806	Fracture of vertebral column with spinal cord injury	ICD-9-CM	Diagnosis
806.0	Closed fracture of cervical vertebra with spinal cord injury	ICD-9-CM	Diagnosis
806.00	Closed fracture of C1-C4 level with unspecified spinal cord injury	ICD-9-CM	Diagnosis
806.01	Closed fracture of C1-C4 level with complete lesion of cord	ICD-9-CM	Diagnosis
806.02	Closed fracture of C1-C4 level with anterior cord syndrome	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
806.03	Closed fracture of C1-C4 level with central cord syndrome	ICD-9-CM	Diagnosis
806.04	Closed fracture of C1-C4 level with other specified spinal cord injury	ICD-9-CM	Diagnosis
806.05	Closed fracture of C5-C7 level with unspecified spinal cord injury	ICD-9-CM	Diagnosis
806.06	Closed fracture of C5-C7 level with complete lesion of cord	ICD-9-CM	Diagnosis
806.07	Closed fracture of C5-C7 level with anterior cord syndrome	ICD-9-CM	Diagnosis
806.08	Closed fracture of C5-C7 level with central cord syndrome	ICD-9-CM	Diagnosis
806.09	Closed fracture of C5-C7 level with other specified spinal cord injury	ICD-9-CM	Diagnosis
806.1	Open fracture of cervical vertebra with spinal cord injury	ICD-9-CM	Diagnosis
806.10	Open fracture of C1-C4 level with unspecified spinal cord injury	ICD-9-CM	Diagnosis
806.11	Open fracture of C1-C4 level with complete lesion of cord	ICD-9-CM	Diagnosis
806.12	Open fracture of C1-C4 level with anterior cord syndrome	ICD-9-CM	Diagnosis
806.13	Open fracture of C1-C4 level with central cord syndrome	ICD-9-CM	Diagnosis
806.14	Open fracture of C1-C4 level with other specified spinal cord injury	ICD-9-CM	Diagnosis
806.15	Open fracture of C5-C7 level with unspecified spinal cord injury	ICD-9-CM	Diagnosis
806.16	Open fracture of C5-C7 level with complete lesion of cord	ICD-9-CM	Diagnosis
806.17	Open fracture of C5-C7 level with anterior cord syndrome	ICD-9-CM	Diagnosis
806.18	Open fracture of C5-C7 level with central cord syndrome	ICD-9-CM	Diagnosis
806.19	Open fracture of C5-C7 level with other specified spinal cord injury	ICD-9-CM	Diagnosis
806.2	Closed fracture of dorsal (thoracic) vertebra with spinal cord injury	ICD-9-CM	Diagnosis
806.20	Closed fracture of T1-T6 level with unspecified spinal cord injury	ICD-9-CM	Diagnosis
806.21	Closed fracture of T1-T6 level with complete lesion of cord	ICD-9-CM	Diagnosis
806.22	Closed fracture of T1-T6 level with anterior cord syndrome	ICD-9-CM	Diagnosis
806.23	Closed fracture of T1-T6 level with central cord syndrome	ICD-9-CM	Diagnosis
806.24	Closed fracture of T1-T6 level with other specified spinal cord injury	ICD-9-CM	Diagnosis
806.25	Closed fracture of T7-T12 level with unspecified spinal cord injury	ICD-9-CM	Diagnosis
806.26	Closed fracture of T7-T12 level with complete lesion of cord	ICD-9-CM	Diagnosis
806.27	Closed fracture of T7-T12 level with anterior cord syndrome	ICD-9-CM	Diagnosis
806.28	Closed fracture of T7-T12 level with central cord syndrome	ICD-9-CM	Diagnosis
806.29	Closed fracture of T7-T12 level with other specified spinal cord injury	ICD-9-CM	Diagnosis
806.3	Open fracture of dorsal vertebra with spinal cord injury	ICD-9-CM	Diagnosis
806.30	Open fracture of T1-T6 level with unspecified spinal cord injury	ICD-9-CM	Diagnosis
806.31	Open fracture of T1-T6 level with complete lesion of cord	ICD-9-CM	Diagnosis
806.32	Open fracture of T1-T6 level with anterior cord syndrome	ICD-9-CM	Diagnosis
806.33	Open fracture of T1-T6 level with central cord syndrome	ICD-9-CM	Diagnosis
806.34	Open fracture of T1-T6 level with other specified spinal cord injury	ICD-9-CM	Diagnosis
806.35	Open fracture of T7-T12 level with unspecified spinal cord injury	ICD-9-CM	Diagnosis
806.36	Open fracture of T7-T12 level with complete lesion of cord	ICD-9-CM	Diagnosis
806.37	Open fracture of T7-T12 level with anterior cord syndrome	ICD-9-CM	Diagnosis
806.38	Open fracture of T7-T12 level with central cord syndrome	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
806.39	Open fracture of T7-T12 level with other specified spinal cord injury	ICD-9-CM	Diagnosis
806.4	Closed fracture of lumbar spine with spinal cord injury	ICD-9-CM	Diagnosis
806.5	Open fracture of lumbar spine with spinal cord injury	ICD-9-CM	Diagnosis
806.6	Closed fracture of sacrum and coccyx with spinal cord injury	ICD-9-CM	Diagnosis
806.60	Closed fracture of sacrum and coccyx with unspecified spinal cord injury	ICD-9-CM	Diagnosis
806.61	Closed fracture of sacrum and coccyx with complete cauda equina lesion	ICD-9-CM	Diagnosis
806.62	Closed fracture of sacrum and coccyx with other cauda equina injury	ICD-9-CM	Diagnosis
806.69	Closed fracture of sacrum and coccyx with other spinal cord injury	ICD-9-CM	Diagnosis
806.7	Open fracture of sacrum and coccyx with spinal cord injury	ICD-9-CM	Diagnosis
806.70	Open fracture of sacrum and coccyx with unspecified spinal cord injury	ICD-9-CM	Diagnosis
806.71	Open fracture of sacrum and coccyx with complete cauda equina lesion	ICD-9-CM	Diagnosis
806.72	Open fracture of sacrum and coccyx with other cauda equina injury	ICD-9-CM	Diagnosis
806.79	Open fracture of sacrum and coccyx with other spinal cord injury	ICD-9-CM	Diagnosis
806.8	Closed fracture of unspecified vertebra with spinal cord injury	ICD-9-CM	Diagnosis
806.9	Open fracture of unspecified vertebra with spinal cord injury	ICD-9-CM	Diagnosis
807	Fracture of rib(s), sternum, larynx, and trachea	ICD-9-CM	Diagnosis
807.0	Closed fracture of rib(s)	ICD-9-CM	Diagnosis
807.00	Closed fracture of rib(s), unspecified	ICD-9-CM	Diagnosis
807.01	Closed fracture of one rib	ICD-9-CM	Diagnosis
807.02	Closed fracture of two ribs	ICD-9-CM	Diagnosis
807.03	Closed fracture of three ribs	ICD-9-CM	Diagnosis
807.04	Closed fracture of four ribs	ICD-9-CM	Diagnosis
807.05	Closed fracture of five ribs	ICD-9-CM	Diagnosis
807.06	Closed fracture of six ribs	ICD-9-CM	Diagnosis
807.07	Closed fracture of seven ribs	ICD-9-CM	Diagnosis
807.08	Closed fracture of eight or more ribs	ICD-9-CM	Diagnosis
807.09	Closed fracture of multiple ribs, unspecified	ICD-9-CM	Diagnosis
807.1	Open fracture of rib(s)	ICD-9-CM	Diagnosis
807.10	Open fracture of rib(s), unspecified	ICD-9-CM	Diagnosis
807.11	Open fracture of one rib	ICD-9-CM	Diagnosis
807.12	Open fracture of two ribs	ICD-9-CM	Diagnosis
807.13	Open fracture of three ribs	ICD-9-CM	Diagnosis
807.14	Open fracture of four ribs	ICD-9-CM	Diagnosis
807.15	Open fracture of five ribs	ICD-9-CM	Diagnosis
807.16	Open fracture of six ribs	ICD-9-CM	Diagnosis
807.17	Open fracture of seven ribs	ICD-9-CM	Diagnosis
807.18	Open fracture of eight or more ribs	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
807.19	Open fracture of multiple ribs, unspecified	ICD-9-CM	Diagnosis
807.2	Closed fracture of sternum	ICD-9-CM	Diagnosis
807.3	Open fracture of sternum	ICD-9-CM	Diagnosis
807.4	Flail chest	ICD-9-CM	Diagnosis
808	Fracture of pelvis	ICD-9-CM	Diagnosis
808.0	Closed fracture of acetabulum	ICD-9-CM	Diagnosis
808.1	Open fracture of acetabulum	ICD-9-CM	Diagnosis
808.2	Closed fracture of pubis	ICD-9-CM	Diagnosis
808.3	Open fracture of pubis	ICD-9-CM	Diagnosis
808.4	Closed fracture of other specified part of pelvis	ICD-9-CM	Diagnosis
808.41	Closed fracture of ilium	ICD-9-CM	Diagnosis
808.42	Closed fracture of ischium	ICD-9-CM	Diagnosis
808.43	Multiple closed pelvic fractures with disruption of pelvic circle	ICD-9-CM	Diagnosis
808.44	Multiple closed pelvic fractures without disruption of pelvic circle	ICD-9-CM	Diagnosis
808.49	Closed fracture of other specified part of pelvis	ICD-9-CM	Diagnosis
808.5	Open fracture of other specified part of pelvis	ICD-9-CM	Diagnosis
808.51	Open fracture of ilium	ICD-9-CM	Diagnosis
808.52	Open fracture of ischium	ICD-9-CM	Diagnosis
808.53	Multiple open pelvic fractures with disruption of pelvic circle	ICD-9-CM	Diagnosis
808.54	Multiple open pelvic fractures without disruption of pelvic circle	ICD-9-CM	Diagnosis
808.59	Open fracture of other specified part of pelvis	ICD-9-CM	Diagnosis
808.8	Unspecified closed fracture of pelvis	ICD-9-CM	Diagnosis
808.9	Unspecified open fracture of pelvis	ICD-9-CM	Diagnosis
809	Ill-defined fractures of bones of trunk	ICD-9-CM	Diagnosis
809.0	Fracture of bones of trunk, closed	ICD-9-CM	Diagnosis
809.1	Fracture of bones of trunk, open	ICD-9-CM	Diagnosis
81.65	Percutaneous vertebroplasty	ICD-9-CM	Diagnosis
81.66	Percutaneous vertebral augmentation	ICD-9-CM	Diagnosis
810	Fracture of clavicle	ICD-9-CM	Diagnosis
810.0	Closed fracture of clavicle	ICD-9-CM	Diagnosis
810.00	Unspecified part of closed fracture of clavicle	ICD-9-CM	Diagnosis
810.01	Closed fracture of sternal end of clavicle	ICD-9-CM	Diagnosis
810.02	Closed fracture of shaft of clavicle	ICD-9-CM	Diagnosis
810.03	Closed fracture of acromial end of clavicle	ICD-9-CM	Diagnosis
810.1	Open fracture of clavicle	ICD-9-CM	Diagnosis
810.10	Unspecified part of open fracture of clavicle	ICD-9-CM	Diagnosis
810.11	Open fracture of sternal end of clavicle	ICD-9-CM	Diagnosis
810.12	Open fracture of shaft of clavicle	ICD-9-CM	Diagnosis
810.13	Open fracture of acromial end of clavicle	ICD-9-CM	Diagnosis
811	Fracture of scapula	ICD-9-CM	Diagnosis
811.0	Closed fracture of scapula	ICD-9-CM	Diagnosis
811.00	Closed fracture of unspecified part of scapula	ICD-9-CM	Diagnosis
811.01	Closed fracture of acromial process of scapula	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
811.02	Closed fracture of coracoid process of scapula	ICD-9-CM	Diagnosis
811.03	Closed fracture of glenoid cavity and neck of scapula	ICD-9-CM	Diagnosis
811.09	Closed fracture of other part of scapula	ICD-9-CM	Diagnosis
811.1	Open fracture of scapula	ICD-9-CM	Diagnosis
811.10	Open fracture of unspecified part of scapula	ICD-9-CM	Diagnosis
811.11	Open fracture of acromial process of scapula	ICD-9-CM	Diagnosis
811.12	Open fracture of coracoid process	ICD-9-CM	Diagnosis
811.13	Open fracture of glenoid cavity and neck of scapula	ICD-9-CM	Diagnosis
811.19	Open fracture of other part of scapula	ICD-9-CM	Diagnosis
812	Fracture of humerus	ICD-9-CM	Diagnosis
812.0	Closed fracture of upper end of humerus	ICD-9-CM	Diagnosis
812.00	Closed fracture of unspecified part of upper end of humerus	ICD-9-CM	Diagnosis
812.01	Closed fracture of surgical neck of humerus	ICD-9-CM	Diagnosis
812.02	Closed fracture of anatomical neck of humerus	ICD-9-CM	Diagnosis
812.03	Closed fracture of greater tuberosity of humerus	ICD-9-CM	Diagnosis
812.09	Other closed fractures of upper end of humerus	ICD-9-CM	Diagnosis
812.1	Open fracture of upper end of humerus	ICD-9-CM	Diagnosis
812.10	Open fracture of unspecified part of upper end of humerus	ICD-9-CM	Diagnosis
812.11	Open fracture of surgical neck of humerus	ICD-9-CM	Diagnosis
812.12	Open fracture of anatomical neck of humerus	ICD-9-CM	Diagnosis
812.13	Open fracture of greater tuberosity of humerus	ICD-9-CM	Diagnosis
812.19	Other open fracture of upper end of humerus	ICD-9-CM	Diagnosis
812.2	Closed fracture of shaft or unspecified part of humerus	ICD-9-CM	Diagnosis
812.20	Closed fracture of unspecified part of humerus	ICD-9-CM	Diagnosis
812.21	Closed fracture of shaft of humerus	ICD-9-CM	Diagnosis
812.3	Open fracture of shaft or unspecified part of humerus	ICD-9-CM	Diagnosis
812.30	Open fracture of unspecified part of humerus	ICD-9-CM	Diagnosis
812.31	Open fracture of shaft of humerus	ICD-9-CM	Diagnosis
812.4	Closed fracture of lower end of humerus	ICD-9-CM	Diagnosis
812.40	Closed fracture of unspecified part of lower end of humerus	ICD-9-CM	Diagnosis
812.41	Closed fracture of supracondylar humerus	ICD-9-CM	Diagnosis
812.42	Closed fracture of lateral condyle of humerus	ICD-9-CM	Diagnosis
812.43	Closed fracture of medial condyle of humerus	ICD-9-CM	Diagnosis
812.44	Closed fracture of unspecified condyle(s) of humerus	ICD-9-CM	Diagnosis
812.49	Other closed fracture of lower end of humerus	ICD-9-CM	Diagnosis
812.5	Open fracture of lower end of humerus	ICD-9-CM	Diagnosis
812.50	Open fracture of unspecified part of lower end of humerus	ICD-9-CM	Diagnosis
812.51	Open fracture of supracondylar humerus	ICD-9-CM	Diagnosis
812.52	Open fracture of lateral condyle of humerus	ICD-9-CM	Diagnosis
812.53	Open fracture of medial condyle of humerus	ICD-9-CM	Diagnosis
812.54	Open fracture of unspecified condyle(s) of humerus	ICD-9-CM	Diagnosis
812.59	Other open fracture of lower end of humerus	ICD-9-CM	Diagnosis
813	Fracture of radius and ulna	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
813.0	Closed fracture of upper end of radius and ulna	ICD-9-CM	Diagnosis
813.00	Unspecified fracture of radius and ulna, upper end of forearm, closed	ICD-9-CM	Diagnosis
813.01	Closed fracture of olecranon process of ulna	ICD-9-CM	Diagnosis
813.02	Closed fracture of coronoid process of ulna	ICD-9-CM	Diagnosis
813.03	Closed Monteggia's fracture	ICD-9-CM	Diagnosis
813.04	Other and unspecified closed fractures of proximal end of ulna (alone)	ICD-9-CM	Diagnosis
813.05	Closed fracture of head of radius	ICD-9-CM	Diagnosis
813.06	Closed fracture of neck of radius	ICD-9-CM	Diagnosis
813.07	Other and unspecified closed fractures of proximal end of radius (alone)	ICD-9-CM	Diagnosis
813.08	Closed fracture of radius with ulna, upper end (any part)	ICD-9-CM	Diagnosis
813.1	Open fracture of upper end of radius and ulna	ICD-9-CM	Diagnosis
813.10	Unspecified open fracture of upper end of forearm	ICD-9-CM	Diagnosis
813.11	Open fracture of olecranon process of ulna	ICD-9-CM	Diagnosis
813.12	Open fracture of coronoid process of ulna	ICD-9-CM	Diagnosis
813.13	Open Monteggia's fracture	ICD-9-CM	Diagnosis
813.14	Other and unspecified open fractures of proximal end of ulna (alone)	ICD-9-CM	Diagnosis
813.15	Open fracture of head of radius	ICD-9-CM	Diagnosis
813.16	Open fracture of neck of radius	ICD-9-CM	Diagnosis
813.17	Other and unspecified open fractures of proximal end of radius (alone)	ICD-9-CM	Diagnosis
813.18	Open fracture of radius with ulna, upper end (any part)	ICD-9-CM	Diagnosis
813.2	Closed fracture of shaft of radius and ulna	ICD-9-CM	Diagnosis
813.20	Unspecified closed fracture of shaft of radius or ulna	ICD-9-CM	Diagnosis
813.21	Closed fracture of shaft of radius (alone)	ICD-9-CM	Diagnosis
813.22	Closed fracture of shaft of ulna (alone)	ICD-9-CM	Diagnosis
813.23	Closed fracture of shaft of radius with ulna	ICD-9-CM	Diagnosis
813.3	Open fracture of shaft of radius and ulna	ICD-9-CM	Diagnosis
813.30	Unspecified open fracture of shaft of radius or ulna	ICD-9-CM	Diagnosis
813.31	Open fracture of shaft of radius (alone)	ICD-9-CM	Diagnosis
813.32	Open fracture of shaft of ulna (alone)	ICD-9-CM	Diagnosis
813.33	Open fracture of shaft of radius with ulna	ICD-9-CM	Diagnosis
813.4	Closed fracture of lower end of radius and ulna	ICD-9-CM	Diagnosis
813.40	Unspecified closed fracture of lower end of forearm	ICD-9-CM	Diagnosis
813.41	Closed Colles' fracture	ICD-9-CM	Diagnosis
813.42	Other closed fractures of distal end of radius (alone)	ICD-9-CM	Diagnosis
813.43	Closed fracture of distal end of ulna (alone)	ICD-9-CM	Diagnosis
813.44	Closed fracture of lower end of radius with ulna	ICD-9-CM	Diagnosis
813.45	Torus fracture of radius (alone)	ICD-9-CM	Diagnosis
813.46	Torus fracture of ulna (alone)	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
813.47	Torus fracture of radius and ulna	ICD-9-CM	Diagnosis
813.5	Open fracture of lower end of radius and ulna	ICD-9-CM	Diagnosis
813.50	Unspecified open fracture of lower end of forearm	ICD-9-CM	Diagnosis
813.51	Open Colles' fracture	ICD-9-CM	Diagnosis
813.52	Other open fractures of distal end of radius (alone)	ICD-9-CM	Diagnosis
813.53	Open fracture of distal end of ulna (alone)	ICD-9-CM	Diagnosis
813.54	Open fracture of lower end of radius with ulna	ICD-9-CM	Diagnosis
813.8	Closed fracture of unspecified part of radius with ulna	ICD-9-CM	Diagnosis
813.80	Closed fracture of unspecified part of forearm	ICD-9-CM	Diagnosis
813.81	Closed fracture of unspecified part of radius (alone)	ICD-9-CM	Diagnosis
813.82	Closed fracture of unspecified part of ulna (alone)	ICD-9-CM	Diagnosis
813.83	Closed fracture of unspecified part of radius with ulna	ICD-9-CM	Diagnosis
813.9	Open fracture of unspecified part of radius with ulna	ICD-9-CM	Diagnosis
813.90	Open fracture of unspecified part of forearm	ICD-9-CM	Diagnosis
813.91	Open fracture of unspecified part of radius (alone)	ICD-9-CM	Diagnosis
813.92	Open fracture of unspecified part of ulna (alone)	ICD-9-CM	Diagnosis
813.93	Open fracture of unspecified part of radius with ulna	ICD-9-CM	Diagnosis
814	Fracture of carpal bone(s)	ICD-9-CM	Diagnosis
814.0	Closed fractures of carpal bones	ICD-9-CM	Diagnosis
814.00	Unspecified closed fracture of carpal bone	ICD-9-CM	Diagnosis
814.01	Closed fracture of navicular (scaphoid) bone of wrist	ICD-9-CM	Diagnosis
814.02	Closed fracture of lunate (semilunar) bone of wrist	ICD-9-CM	Diagnosis
814.03	Closed fracture of triquetral (cuneiform) bone of wrist	ICD-9-CM	Diagnosis
814.04	Closed fracture of pisiform bone of wrist	ICD-9-CM	Diagnosis
814.05	Closed fracture of trapezium bone (larger multangular) of wrist	ICD-9-CM	Diagnosis
814.06	Closed fracture of trapezoid bone (smaller multangular) of wrist	ICD-9-CM	Diagnosis
814.07	Closed fracture of capitate bone (os magnum) of wrist	ICD-9-CM	Diagnosis
814.08	Closed fracture of hamate (unciform) bone of wrist	ICD-9-CM	Diagnosis
814.09	Closed fracture of other bone of wrist	ICD-9-CM	Diagnosis
814.1	Open fractures of carpal bones	ICD-9-CM	Diagnosis
814.10	Unspecified open fracture of carpal bone	ICD-9-CM	Diagnosis
814.11	Open fracture of navicular (scaphoid) bone of wrist	ICD-9-CM	Diagnosis
814.12	Open fracture of lunate (semilunar) bone of wrist	ICD-9-CM	Diagnosis
814.13	Open fracture of triquetral (cuneiform) bone of wrist	ICD-9-CM	Diagnosis
814.14	Open fracture of pisiform bone of wrist	ICD-9-CM	Diagnosis
814.15	Open fracture of trapezium bone (larger multangular) of wrist	ICD-9-CM	Diagnosis
814.16	Open fracture of trapezoid bone (smaller multangular) of wrist	ICD-9-CM	Diagnosis
814.17	Open fracture of capitate bone (os magnum) of wrist	ICD-9-CM	Diagnosis
814.18	Open fracture of hamate (unciform) bone of wrist	ICD-9-CM	Diagnosis
814.19	Open fracture of other bone of wrist	ICD-9-CM	Diagnosis
815	Fracture of metacarpal bone(s)	ICD-9-CM	Diagnosis
815.0	Closed fracture of metacarpal bones	ICD-9-CM	Diagnosis
815.00	Closed fracture of metacarpal bone(s), site unspecified	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
815.01	Closed fracture of base of thumb (first) metacarpal bone(s)	ICD-9-CM	Diagnosis
815.02	Closed fracture of base of other metacarpal bone(s)	ICD-9-CM	Diagnosis
815.03	Closed fracture of shaft of metacarpal bone(s)	ICD-9-CM	Diagnosis
815.04	Closed fracture of neck of metacarpal bone(s)	ICD-9-CM	Diagnosis
815.09	Closed fracture of multiple sites of metacarpus	ICD-9-CM	Diagnosis
815.1	Open fracture of metacarpal bones	ICD-9-CM	Diagnosis
815.10	Open fracture of metacarpal bone(s), site unspecified	ICD-9-CM	Diagnosis
815.11	Open fracture of base of thumb (first) metacarpal bone(s)	ICD-9-CM	Diagnosis
815.12	Open fracture of base of other metacarpal bone(s)	ICD-9-CM	Diagnosis
815.13	Open fracture of shaft of metacarpal bone(s)	ICD-9-CM	Diagnosis
815.14	Open fracture of neck of metacarpal bone(s)	ICD-9-CM	Diagnosis
815.19	Open fracture of multiple sites of metacarpus	ICD-9-CM	Diagnosis
818	Ill-defined fractures of upper limb	ICD-9-CM	Diagnosis
818.0	Ill-defined closed fractures of upper limb	ICD-9-CM	Diagnosis
818.1	Ill-defined open fractures of upper limb	ICD-9-CM	Diagnosis
819	Multiple fractures involving both upper limbs, and upper limb with rib(s) and sternum	ICD-9-CM	Diagnosis
819.0	Multiple closed fractures involving both upper limbs, and upper limb with rib(s) and sternum	ICD-9-CM	Diagnosis
819.1	Multiple open fractures involving both upper limbs, and upper limb with rib(s) and sternum	ICD-9-CM	Diagnosis
820	Fracture of neck of femur	ICD-9-CM	Diagnosis
820.0	Closed transcervical fracture	ICD-9-CM	Diagnosis
820.00	Closed fracture of unspecified intracapsular section of neck of femur	ICD-9-CM	Diagnosis
820.01	Closed fracture of epiphysis (separation) (upper) of neck of femur	ICD-9-CM	Diagnosis
820.02	Closed fracture of midcervical section of femur	ICD-9-CM	Diagnosis
820.03	Closed fracture of base of neck of femur	ICD-9-CM	Diagnosis
820.09	Other closed transcervical fracture of femur	ICD-9-CM	Diagnosis
820.1	Open transcervical fracture	ICD-9-CM	Diagnosis
820.10	Open fracture of unspecified intracapsular section of neck of femur	ICD-9-CM	Diagnosis
820.11	Open fracture of epiphysis (separation) (upper) of neck of femur	ICD-9-CM	Diagnosis
820.12	Open fracture of midcervical section of femur	ICD-9-CM	Diagnosis
820.13	Open fracture of base of neck of femur	ICD-9-CM	Diagnosis
820.19	Other open transcervical fracture of femur	ICD-9-CM	Diagnosis
820.2	Closed pertrochanteric fracture of femur	ICD-9-CM	Diagnosis
820.20	Closed fracture of unspecified trochanteric section of femur	ICD-9-CM	Diagnosis
820.21	Closed fracture of intertrochanteric section of femur	ICD-9-CM	Diagnosis
820.22	Closed fracture of subtrochanteric section of femur	ICD-9-CM	Diagnosis
820.3	Open pertrochanteric fracture of femur	ICD-9-CM	Diagnosis
820.30	Open fracture of unspecified trochanteric section of femur	ICD-9-CM	Diagnosis
820.31	Open fracture of intertrochanteric section of femur	ICD-9-CM	Diagnosis
820.32	Open fracture of subtrochanteric section of femur	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
820.8	Closed fracture of unspecified part of neck of femur	ICD-9-CM	Diagnosis
820.9	Open fracture of unspecified part of neck of femur	ICD-9-CM	Diagnosis
821	Fracture of other and unspecified parts of femur	ICD-9-CM	Diagnosis
821.0	Closed fracture of shaft or unspecified part of femur	ICD-9-CM	Diagnosis
821.00	Closed fracture of unspecified part of femur	ICD-9-CM	Diagnosis
821.01	Closed fracture of shaft of femur	ICD-9-CM	Diagnosis
821.1	Open fracture of shaft or unspecified part of femur	ICD-9-CM	Diagnosis
821.10	Open fracture of unspecified part of femur	ICD-9-CM	Diagnosis
821.11	Open fracture of shaft of femur	ICD-9-CM	Diagnosis
821.2	Closed fracture of lower end of femur	ICD-9-CM	Diagnosis
821.20	Closed fracture of unspecified part of lower end of femur	ICD-9-CM	Diagnosis
821.21	Closed fracture of femoral condyle	ICD-9-CM	Diagnosis
821.22	Closed fracture of lower epiphysis of femur	ICD-9-CM	Diagnosis
821.23	Closed supracondylar fracture of femur	ICD-9-CM	Diagnosis
821.29	Other closed fracture of lower end of femur	ICD-9-CM	Diagnosis
821.3	Open fracture of lower end of femur	ICD-9-CM	Diagnosis
821.30	Open fracture of unspecified part of lower end of femur	ICD-9-CM	Diagnosis
821.31	Open fracture of femoral condyle	ICD-9-CM	Diagnosis
821.32	Open fracture of lower epiphysis of femur	ICD-9-CM	Diagnosis
821.33	Open supracondylar fracture of femur	ICD-9-CM	Diagnosis
821.39	Other open fracture of lower end of femur	ICD-9-CM	Diagnosis
822	Fracture of patella	ICD-9-CM	Diagnosis
822.0	Closed fracture of patella	ICD-9-CM	Diagnosis
822.1	Open fracture of patella	ICD-9-CM	Diagnosis
823	Fracture of tibia and fibula	ICD-9-CM	Diagnosis
823.0	Closed fracture of upper end of tibia and fibula	ICD-9-CM	Diagnosis
823.00	Closed fracture of upper end of tibia	ICD-9-CM	Diagnosis
823.01	Closed fracture of upper end of fibula	ICD-9-CM	Diagnosis
823.02	Closed fracture of upper end of fibula with tibia	ICD-9-CM	Diagnosis
823.1	Open fracture of upper end of tibia and fibula	ICD-9-CM	Diagnosis
823.10	Open fracture of upper end of tibia	ICD-9-CM	Diagnosis
823.11	Open fracture of upper end of fibula	ICD-9-CM	Diagnosis
823.12	Open fracture of upper end of fibula with tibia	ICD-9-CM	Diagnosis
823.2	Closed fracture of shaft of tibia and fibula	ICD-9-CM	Diagnosis
823.20	Closed fracture of shaft of tibia	ICD-9-CM	Diagnosis
823.21	Closed fracture of shaft of fibula	ICD-9-CM	Diagnosis
823.22	Closed fracture of shaft of fibula with tibia	ICD-9-CM	Diagnosis
823.3	Open fracture of shaft of tibia and fibula	ICD-9-CM	Diagnosis
823.30	Open fracture of shaft of tibia	ICD-9-CM	Diagnosis
823.31	Open fracture of shaft of fibula	ICD-9-CM	Diagnosis
823.32	Open fracture of shaft of fibula with tibia	ICD-9-CM	Diagnosis
823.4	Torus fracture of tibia and fibula	ICD-9-CM	Diagnosis
823.40	Torus fracture of tibia alone	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
823.41	Torus fracture of fibula alone	ICD-9-CM	Diagnosis
823.42	Torus fracture of fibula with tibia	ICD-9-CM	Diagnosis
823.8	Closed fracture of unspecified part of tibia and fibula	ICD-9-CM	Diagnosis
823.80	Closed fracture of unspecified part of tibia	ICD-9-CM	Diagnosis
823.81	Closed fracture of unspecified part of fibula	ICD-9-CM	Diagnosis
823.82	Closed fracture of unspecified part of fibula with tibia	ICD-9-CM	Diagnosis
823.9	Open fracture of unspecified part of tibia and fibula	ICD-9-CM	Diagnosis
823.90	Open fracture of unspecified part of tibia	ICD-9-CM	Diagnosis
823.91	Open fracture of unspecified part of fibula	ICD-9-CM	Diagnosis
823.92	Open fracture of unspecified part of fibula with tibia	ICD-9-CM	Diagnosis
824	Fracture of ankle	ICD-9-CM	Diagnosis
824.0	Closed fracture of medial malleolus	ICD-9-CM	Diagnosis
824.1	Open fracture of medial malleolus	ICD-9-CM	Diagnosis
824.2	Closed fracture of lateral malleolus	ICD-9-CM	Diagnosis
824.3	Open fracture of lateral malleolus	ICD-9-CM	Diagnosis
824.4	Closed bimalleolar fracture	ICD-9-CM	Diagnosis
824.5	Open bimalleolar fracture	ICD-9-CM	Diagnosis
824.6	Closed trimalleolar fracture	ICD-9-CM	Diagnosis
824.7	Open trimalleolar fracture	ICD-9-CM	Diagnosis
824.8	Unspecified closed fracture of ankle	ICD-9-CM	Diagnosis
824.9	Unspecified open fracture of ankle	ICD-9-CM	Diagnosis
825	Fracture of one or more tarsal and metatarsal bones	ICD-9-CM	Diagnosis
825.0	Closed fracture of calcaneus	ICD-9-CM	Diagnosis
825.1	Open fracture of calcaneus	ICD-9-CM	Diagnosis
825.2	Closed fracture of other tarsal and metatarsal bones	ICD-9-CM	Diagnosis
825.20	Closed fracture of unspecified bone(s) of foot (except toes)	ICD-9-CM	Diagnosis
825.21	Closed fracture of astragalus	ICD-9-CM	Diagnosis
825.22	Closed fracture of navicular (scaphoid) bone of foot	ICD-9-CM	Diagnosis
825.23	Closed fracture of cuboid bone	ICD-9-CM	Diagnosis
825.24	Closed fracture of cuneiform bone of foot	ICD-9-CM	Diagnosis
825.25	Closed fracture of metatarsal bone(s)	ICD-9-CM	Diagnosis
825.29	Other closed fracture of tarsal and metatarsal bones	ICD-9-CM	Diagnosis
825.3	Open fracture of other tarsal and metatarsal bones	ICD-9-CM	Diagnosis
825.30	Open fracture of unspecified bone(s) of foot (except toes)	ICD-9-CM	Diagnosis
825.31	Open fracture of astragalus	ICD-9-CM	Diagnosis
825.32	Open fracture of navicular (scaphoid) bone of foot	ICD-9-CM	Diagnosis
825.33	Open fracture of cuboid bone	ICD-9-CM	Diagnosis
825.34	Open fracture of cuneiform bone of foot,	ICD-9-CM	Diagnosis
825.35	Open fracture of metatarsal bone(s)	ICD-9-CM	Diagnosis
825.39	Other open fractures of tarsal and metatarsal bones	ICD-9-CM	Diagnosis
827	Other, multiple, and ill-defined fractures of lower limb	ICD-9-CM	Diagnosis
827.0	Other, multiple and ill-defined closed fractures of lower limb	ICD-9-CM	Diagnosis
827.1	Other, multiple and ill-defined open fractures of lower limb	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
828	Multiple fractures involving both lower limbs, lower with upper limb, and lower limb(s) with rib(s) and sternum	ICD-9-CM	Diagnosis
828.0	Multiple closed fractures involving both lower limbs, lower with upper limb, and lower limb(s) with rib(s) and sternum	ICD-9-CM	Diagnosis
828.1	Multiple fractures involving both lower limbs, lower with upper limb, and lower limb(s) with rib(s) and sternum, open	ICD-9-CM	Diagnosis
V54.13	Aftercare for healing traumatic fracture of hip	ICD-9-CM	Diagnosis
V54.23	Aftercare for healing pathologic fracture of hip	ICD-9-CM	Diagnosis
<b>Human Immunodeficiency Virus or Acquired Immunodeficiency Syndrome</b>			
042	Human immunodeficiency virus [HIV]	ICD-9-CM	Diagnosis
043	HIV infection causing other specified conditions	ICD-9-CM	Diagnosis
043.1	HIV infection causing lymphadenopathy	ICD-9-CM	Diagnosis
043.2	HIV infection causing other disorders involving the immune mechanism	ICD-9-CM	Diagnosis
043.3	HIV infection causing other specified conditions	ICD-9-CM	Diagnosis
043.9	AIDS related complex, unspecified	ICD-9-CM	Diagnosis
044	Other HIV infection	ICD-9-CM	Diagnosis
044.0	Other HIV infection	ICD-9-CM	Diagnosis
044.9	HIV infection, unspecified	ICD-9-CM	Diagnosis
795.11	Nonspecific serologic evidence of human immunodeficiency virus (HIV)	ICD-9-CM	Diagnosis
V08	Asymptomatic human immunodeficiency virus (HIV) infection status	ICD-9-CM	Diagnosis
<b>Hyperlipidemia or Lipid Disorder</b>			
272.0	Pure hypercholesterolemia	ICD-9-CM	Diagnosis
272.1	Pure hyperglyceridemia	ICD-9-CM	Diagnosis
272.2	Mixed hyperlipidemia	ICD-9-CM	Diagnosis
272.4	Other and unspecified hyperlipidemia	ICD-9-CM	Diagnosis
<b>Hypertension</b>			
401	Essential hypertension	ICD-9-CM	Diagnosis
401.0	Essential hypertension, malignant	ICD-9-CM	Diagnosis
401.1	Essential hypertension, benign	ICD-9-CM	Diagnosis
401.9	Unspecified essential hypertension	ICD-9-CM	Diagnosis
402	Hypertensive heart disease	ICD-9-CM	Diagnosis
402.0	Malignant hypertensive heart disease	ICD-9-CM	Diagnosis
402.00	Malignant hypertensive heart disease without heart failure	ICD-9-CM	Diagnosis
402.1	Benign hypertensive heart disease	ICD-9-CM	Diagnosis
402.10	Benign hypertensive heart disease without heart failure	ICD-9-CM	Diagnosis
402.9	Unspecified hypertensive heart disease	ICD-9-CM	Diagnosis
402.90	Unspecified hypertensive heart disease without heart failure	ICD-9-CM	Diagnosis
403	Hypertensive chronic kidney disease	ICD-9-CM	Diagnosis
403.0	Hypertensive chronic kidney disease, malignant	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
403.00	Hypertensive chronic kidney disease, malignant, with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
403.01	Hypertensive chronic kidney disease, malignant, with chronic kidney disease stage V or end-stage renal disease	ICD-9-CM	Diagnosis
403.1	Hypertensive chronic kidney disease, benign	ICD-9-CM	Diagnosis
403.10	Hypertensive chronic kidney disease, benign, with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
403.11	Hypertensive chronic kidney disease, benign, with chronic kidney disease stage V or end-stage renal disease	ICD-9-CM	Diagnosis
403.9	Hypertensive chronic kidney disease, unspecified	ICD-9-CM	Diagnosis
403.90	Hypertensive chronic kidney disease, unspecified, with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
403.91	Hypertensive chronic kidney disease, unspecified, with chronic kidney disease stage V or end-stage renal disease	ICD-9-CM	Diagnosis
404	Hypertensive heart and chronic kidney disease	ICD-9-CM	Diagnosis
404.0	Hypertensive heart and chronic kidney disease, malignant	ICD-9-CM	Diagnosis
404.00	Hypertensive heart and chronic kidney disease, malignant, without heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.01	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.02	Hypertensive heart and chronic kidney disease, malignant, without heart failure and with chronic kidney disease stage V or end-stage renal disease	ICD-9-CM	Diagnosis
404.03	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage V or end-stage renal disease	ICD-9-CM	Diagnosis
404.1	Hypertensive heart and chronic kidney disease, benign	ICD-9-CM	Diagnosis
404.10	Hypertensive heart and chronic kidney disease, benign, without heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.11	Hypertensive heart and chronic kidney disease, benign, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.12	Hypertensive heart and chronic kidney disease, benign, without heart failure and with chronic kidney disease stage V or end-stage renal disease	ICD-9-CM	Diagnosis
404.13	Hypertensive heart and chronic kidney disease, benign, with heart failure and chronic kidney disease stage V or end-stage renal disease	ICD-9-CM	Diagnosis
404.9	Hypertensive heart and chronic kidney disease, unspecified	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
404.90	Hypertensive heart and chronic kidney disease, unspecified, without heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.91	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	ICD-9-CM	Diagnosis
404.92	Hypertensive heart and chronic kidney disease, unspecified, without heart failure and with chronic kidney disease stage V or end-stage renal disease	ICD-9-CM	Diagnosis
404.93	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and chronic kidney disease stage V or end-stage renal disease	ICD-9-CM	Diagnosis
405	Secondary hypertension	ICD-9-CM	Diagnosis
405.0	Secondary hypertension, malignant	ICD-9-CM	Diagnosis
405.01	Secondary renovascular hypertension, malignant	ICD-9-CM	Diagnosis
405.09	Other secondary hypertension, malignant	ICD-9-CM	Diagnosis
405.1	Secondary hypertension, benign	ICD-9-CM	Diagnosis
405.11	Secondary renovascular hypertension, benign	ICD-9-CM	Diagnosis
405.19	Other secondary hypertension, benign	ICD-9-CM	Diagnosis
405.9	Unspecified secondary hypertension, unspecified	ICD-9-CM	Diagnosis
405.91	Secondary renovascular hypertension, unspecified	ICD-9-CM	Diagnosis
405.99	Other secondary hypertension, unspecified	ICD-9-CM	Diagnosis
<b>Hypoglycemia</b>			
250.8	Diabetes with other specified manifestations	ICD-9-CM	Diagnosis
250.80	Diabetes with other specified manifestations, type II or unspecified type, not stated as uncontrolled	ICD-9-CM	Diagnosis
250.81	Diabetes with other specified manifestations, type I [juvenile type], not stated as uncontrolled	ICD-9-CM	Diagnosis
250.82	Diabetes with other specified manifestations, type II or unspecified type, uncontrolled	ICD-9-CM	Diagnosis
250.83	Diabetes with other specified manifestations, type I [juvenile type], uncontrolled	ICD-9-CM	Diagnosis
251.0	Hypoglycemic coma	ICD-9-CM	Diagnosis
251.1	Other specified hypoglycemia	ICD-9-CM	Diagnosis
251.2	Hypoglycemia, unspecified	ICD-9-CM	Diagnosis
<b>Obesity (or Weight Gain)</b>			
278.0	Overweight and obesity	ICD-9-CM	Diagnosis
278.00	Obesity, unspecified	ICD-9-CM	Diagnosis
278.01	Morbid obesity	ICD-9-CM	Diagnosis
278.02	Overweight	ICD-9-CM	Diagnosis
278.03	Obesity hypoventilation syndrome	ICD-9-CM	Diagnosis
783.1	Abnormal weight gain	ICD-9-CM	Diagnosis
793.91	Image test inconclusive due to excess body fat	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
V85.3	Body Mass Index between 30-39, adult	ICD-9-CM	Diagnosis
V85.30	Body Mass Index 30.0-30.9, adult	ICD-9-CM	Diagnosis
V85.31	Body Mass Index 31.0-31.9, adult	ICD-9-CM	Diagnosis
V85.32	Body Mass Index 32.0-32.9, adult	ICD-9-CM	Diagnosis
V85.33	Body Mass Index 33.0-33.9, adult	ICD-9-CM	Diagnosis
V85.34	Body Mass Index 34.0-34.9, adult	ICD-9-CM	Diagnosis
V85.35	Body Mass Index 35.0-35.9, adult	ICD-9-CM	Diagnosis
V85.36	Body Mass Index 36.0-36.9, adult	ICD-9-CM	Diagnosis
V85.37	Body Mass Index 37.0-37.9, adult	ICD-9-CM	Diagnosis
V85.38	Body Mass Index 38.0-38.9, adult	ICD-9-CM	Diagnosis
V85.39	Body Mass Index 39.0-39.9, adult	ICD-9-CM	Diagnosis
V85.4	Body Mass Index 40 and over, adult	ICD-9-CM	Diagnosis
V85.41	Body Mass Index 40.0-44.9, adult	ICD-9-CM	Diagnosis
V85.42	Body Mass Index 45.0-49.9, adult	ICD-9-CM	Diagnosis
V85.43	Body Mass Index 50.0-59.9, adult	ICD-9-CM	Diagnosis
V85.44	Body Mass Index 60.0-69.9, adult	ICD-9-CM	Diagnosis
V85.45	Body Mass Index 70 and over, adult	ICD-9-CM	Diagnosis
<b>Osteoporosis</b>			
733.0	Osteoporosis	ICD-9-CM	Diagnosis
733.00	Unspecified osteoporosis	ICD-9-CM	Diagnosis
733.01	Senile osteoporosis	ICD-9-CM	Diagnosis
733.02	Idiopathic osteoporosis	ICD-9-CM	Diagnosis
733.03	Disuse osteoporosis	ICD-9-CM	Diagnosis
733.09	Other osteoporosis	ICD-9-CM	Diagnosis
V17.81	Family history of, Osteoporosis	ICD-9-CM	Diagnosis
V82.81	Special screening for osteoporosis	ICD-9-CM	Diagnosis
<b>Peripheral Neuropathy</b>			
250.6	Diabetes with neurological manifestations	ICD-9-CM	Diagnosis
250.60	Diabetes with neurological manifestations, type II or unspecified type, not stated as uncontrolled	ICD-9-CM	Diagnosis
250.61	Diabetes with neurological manifestations, type I [juvenile type], not stated as uncontrolled	ICD-9-CM	Diagnosis
250.62	Diabetes with neurological manifestations, type II or unspecified type, uncontrolled	ICD-9-CM	Diagnosis
250.63	Diabetes with neurological manifestations, type I [juvenile type], uncontrolled	ICD-9-CM	Diagnosis
337.1	Peripheral autonomic neuropathy in disorders classified elsewhere	ICD-9-CM	Diagnosis
354	Mononeuritis of upper limb and mononeuritis multiplex	ICD-9-CM	Diagnosis
354.0	Carpal tunnel syndrome	ICD-9-CM	Diagnosis
354.1	Other lesion of median nerve	ICD-9-CM	Diagnosis
354.2	Lesion of ulnar nerve	ICD-9-CM	Diagnosis
354.3	Lesion of radial nerve	ICD-9-CM	Diagnosis
354.4	Causalgia of upper limb	ICD-9-CM	Diagnosis

**Appendix F. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), Current Procedural Terminology, Fourth Edition (CPT-4, Category I-III), and Healthcare Common Procedure Coding System (HCPCS) Diagnosis and Procedure Codes Used to Define Covariates and Subgroup Criteria in this Report**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>	<b>Code Category</b>
354.5	Mononeuritis multiplex	ICD-9-CM	Diagnosis
354.8	Other mononeuritis of upper limb	ICD-9-CM	Diagnosis
354.9	Unspecified mononeuritis of upper limb	ICD-9-CM	Diagnosis
355	Mononeuritis of lower limb and unspecified site	ICD-9-CM	Diagnosis
355.0	Lesion of sciatic nerve	ICD-9-CM	Diagnosis
355.1	Meralgia paresthetica	ICD-9-CM	Diagnosis
355.2	Other lesion of femoral nerve	ICD-9-CM	Diagnosis
355.3	Lesion of lateral popliteal nerve	ICD-9-CM	Diagnosis
355.4	Lesion of medial popliteal nerve	ICD-9-CM	Diagnosis
355.5	Tarsal tunnel syndrome	ICD-9-CM	Diagnosis
355.6	Lesion of plantar nerve	ICD-9-CM	Diagnosis
355.7	Other mononeuritis of lower limb	ICD-9-CM	Diagnosis
355.71	Causalgia of lower limb	ICD-9-CM	Diagnosis
355.79	Other mononeuritis of lower limb	ICD-9-CM	Diagnosis
355.8	Unspecified mononeuritis of lower limb	ICD-9-CM	Diagnosis
355.9	Mononeuritis of unspecified site	ICD-9-CM	Diagnosis
357.2	Polyneuropathy in diabetes	ICD-9-CM	Diagnosis
<b>Tobacco Use</b>			
305.1	Nondependent tobacco use disorder	ICD-9-CM	Diagnosis
V15.82	Personal history of tobacco use, presenting hazards to health	ICD-9-CM	Diagnosis

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Report**

Generic Name	Brand Name
<b>Anti-Diabetic Medication</b>	
<b>Saxagliptin</b>	
dapagliflozin propanediol/saxagliptin hcl	Qtern
saxagliptin hcl	Onglyza
saxagliptin hcl/metformin hcl	Kombiglyze XR
<b>Sitagliptin</b>	
ertugliflozin pidolate/sitagliptin phosphate	Steglujan
sitagliptin phosphate	Januvia
sitagliptin phosphate/metformin hcl	Janumet
sitagliptin phosphate/metformin hcl	Janumet XR
sitagliptin phosphate/simvastatin	Juvisync
<b>Long-Acting Insulins</b>	
insulin aspart protamine human/insulin aspart	Novolog Mix 70-30flexpen U-100
insulin aspart protamine human/insulin aspart	Novolog Mix 70-30 U-100 Insulin
insulin degludec	Tresiba Flextouch U-200
insulin degludec	Tresiba Flextouch U-100
insulin degludec/liraglutide	Xultophy 100/3.6
insulin detemir	Levemir Flextouch U-100 Insulin
insulin detemir	Levemir Flexpen
insulin detemir	Levemir U-100 Insulin
insulin glargine,human recombinant analog	Lantus U-100 Insulin
insulin glargine,human recombinant analog	Basaglar Kwikpen U-100 Insulin
insulin glargine,human recombinant analog	Toujeo Solostar U-300 Insulin
insulin glargine,human recombinant analog	Lantus Solostar U-100 Insulin
insulin glargine,human recombinant analog/lixisenatide	Soliqua 100/33
insulin lispro protamine and insulin lispro	Humalog Mix 50-50 Insulin U-100
insulin lispro protamine and insulin lispro	Humalog Mix 75-25(U-100)Insulin
insulin lispro protamine and insulin lispro	Humalog Mix 75-25 Kwikpen
insulin lispro protamine and insulin lispro	Humalog Mix 50-50 Kwikpen
insulin nph human isophane	Novolin N Penfill
insulin nph human isophane	Humulin N Pen
insulin nph human isophane	Humulin N NPH Insulin Kwikpen
insulin nph human isophane	Novolin N Innolet
insulin nph human isophane	Humulin N Nph U-100 Insulin
insulin nph human isophane	Novolin N Nph U-100 Insulin
insulin nph human isophane/insulin regular, human	Novolin 70/30 Penfill
insulin nph human isophane/insulin regular, human	Humulin 70/30 Insulin Pen
insulin nph human isophane/insulin regular, human	Humulin 70/30 U-100 Kwikpen
insulin nph human isophane/insulin regular, human	Novolin 70/30 Innolet Insulin
insulin nph human isophane/insulin regular, human	Humulin 70/30 U-100 Insulin
insulin nph human isophane/insulin regular, human	Humulin 50/50
insulin nph human isophane/insulin regular, human	Novolin 70/30 U-100 Insulin

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Report**

<b>Generic Name</b>	<b>Brand Name</b>
<b>Pioglitazone</b>	
alogliptin benzoate/pioglitazone hcl	Alogliptin-Pioglitazone
alogliptin benzoate/pioglitazone hcl	Oseni
pioglitazone hcl	Pioglitazone
pioglitazone hcl	Actos
pioglitazone hcl/glimepiride	Pioglitazone-Glimepiride
pioglitazone hcl/glimepiride	Duetact
pioglitazone hcl/metformin hcl	Pioglitazone-Metformin
pioglitazone hcl/metformin hcl	Actoplus MET
pioglitazone hcl/metformin hcl	Actoplus Met Xr
<b>Second-Generation Sulfonylurea</b>	
glimepiride	Amaryl
glimepiride	Glimepiride
glipizide	Glucotrol
glipizide	Glipizide
glipizide	Glucotrol XL
glipizide/metformin hcl	Metaglip
glipizide/metformin hcl	Glipizide-Metformin
glyburide	Micronase
glyburide	Diabeta
glyburide	Glyburide
glyburide,micronized	Glynase
glyburide,micronized	Glyburide Micronized
glyburide/metformin hcl	Glucovance
glyburide/metformin hcl	Glyburide-Metformin
pioglitazone hcl/glimepiride	Pioglitazone-Glimepiride
pioglitazone hcl/glimepiride	Duetact
rosiglitazone maleate/glimepiride	Avandaryl
<b>Alpha-Glucosidase Inhibitor</b>	
miglitol	Glyset
acarbose	Precose
acarbose	Acarbose
miglitol	Miglitol
<b>Amylin Analog-Type</b>	
pramlintide acetate	Symlinpen 60
pramlintide acetate	Symlinpen 120
pramlintide acetate	Symlin
<b>Biguanide</b>	
saxagliptin hcl/metformin hcl	Kombiglyze XR
sitagliptin phosphate/metformin hcl	Janumet XR
sitagliptin phosphate/metformin hcl	Janumet
rosiglitazone maleate/metformin hcl	Avandamet
metformin hcl	Glucophage
metformin hcl	Glucophage XR
glyburide/metformin hcl	Glucovance

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Report**

<b>Generic Name</b>	<b>Brand Name</b>
glipizide/metformin hcl	Metaglip
metformin hcl	Metformin
pioglitazone hcl/metformin hcl	Pioglitazone-Metformin
glyburide/metformin hcl	Glyburide-Metformin
glipizide/metformin hcl	Glipizide-Metformin
repaglinide/metformin hcl	Prandimet
dapagliflozin propanediol/metformin hcl	Xigduo XR
linagliptin/metformin hcl	Jentadueto
empagliflozin/metformin hcl	Synjardy
linagliptin/metformin hcl	Jentadueto XR
empagliflozin/metformin hcl	Synjardy XR
metformin hcl	Riomet
metformin hcl	Glumetza
pioglitazone hcl/metformin hcl	Actoplus MET
alogliptin benzoate/metformin hcl	Alogliptin-Metformin
canagliflozin/metformin hcl	Invokamet
canagliflozin/metformin hcl	Invokamet XR
metformin hcl	Fortamet
pioglitazone hcl/metformin hcl	Actoplus Met Xr
alogliptin benzoate/metformin hcl	Kazano
repaglinide/metformin hcl	Repaglinide-Metformin
metformin/caffeine/amino acids 7/herbal comb 125/choline b	Appformin
metformin/amino acids no.7/herbal cmb.125/choline bitartrat	Appformin-D
metformin hcl/blood sugar diagnostic	Dm2
<b>Other Dipeptidyl Peptidase-4 (Dpp-4) Inhibitor</b>	
linagliptin	Tradjenta
linagliptin/metformin hcl	Jentadueto
empagliflozin/linagliptin	Glyxambi
linagliptin/metformin hcl	Jentadueto XR
alogliptin benzoate	Alogliptin
alogliptin benzoate/metformin hcl	Alogliptin-Metformin
alogliptin benzoate	Nesina
alogliptin benzoate/metformin hcl	Kazano
alogliptin benzoate/pioglitazone hcl	Alogliptin-Pioglitazone
alogliptin benzoate/pioglitazone hcl	Oseni
<b>Glucagon-Like Peptide-1 (GLP-1) Analogue</b>	
dulaglutide	Trulicity
lixisenatide	Adlyxin
insulin glargine,human recombinant analog/lixisenatide	Soliqua 100/33
insulin degludec/liraglutide	Xultophy 100/3.6
liraglutide	Victoza 2-Pak
liraglutide	Victoza 3-Pak
semaglutide	Ozempic
albiglutide	Tanzeum
exenatide	Byetta

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Report**

<b>Generic Name</b>	<b>Brand Name</b>
exenatide microspheres	Bydureon
exenatide microspheres	Bydureon Bcise
<b>Meglitinide</b>	
nateglinide	Starlix
repaglinide	Prandin
repaglinide/metformin hcl	Prandimet
repaglinide	Repaglinide
nateglinide	Nateglinide
repaglinide/metformin hcl	Repaglinide-Metformin
<b>First-Generation Sulfonylurea</b>	
chlorpropamide	Chlorpropamide
tolbutamide	Tolbutamide
tolazamide	Tolazamide
<b>Short-Acting Insulins</b>	
insulin aspart	Novolog Penfill U-100 Insulin
insulin aspart	Novolog Flexpen U-100 Insulin
insulin aspart	Novolog U-100 Insulin Aspart
insulin aspart (niacinamide)	Fiasp Flextouch U-100 Insulin
insulin aspart (niacinamide)	Fiasp U-100 Insulin
insulin glulisine	Apidra U-100 Insulin
insulin glulisine	Apidra Solostar U-100 Insulin
insulin lispro	Humalog U-100 Insulin
insulin lispro	Humalog Kwikpen Insulin
insulin lispro	Humalog Pen
insulin lispro	Admelog Solostar U-100 Insulin
insulin lispro	Humalog Junior Kwikpen U-100
insulin lispro	Admelog U-100 Insulin Lispro
insulin regular, human	Novolin R Penfill
insulin regular, human	Novolin R Regular U-100 Insulin
insulin regular, human	Afrezza
insulin regular, human	Humulin R U-500 (Conc) Kwikpen
insulin regular, human	Novolin R Innolet
insulin regular, human	Humulin R Regular U-100 Insulin
insulin regular, human	Humulin R U-500 (Conc) Insulin
<b>Other Thiazolidinedione</b>	
rosiglitazone maleate/glimepiride	Avandaryl
rosiglitazone maleate/metformin hcl	Avandamet
rosiglitazone maleate	Avandia
<b>Sodium-Glucose Cotransporter-2 (Sglt-2) Inhibitor</b>	
dapagliflozin propanediol	Farxiga
ertugliflozin pidolate	Steglatro
ertugliflozin pidolate/sitagliptin phosphate	Steglujan
dapagliflozin propanediol/metformin hcl	Xigduo XR
dapagliflozin propanediol/saxagliptin hcl	Qtern
empagliflozin	Jardiance

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Report**

<b>Generic Name</b>	<b>Brand Name</b>
empagliflozin/metformin hcl	Synjardy
empagliflozin/linagliptin	Glyxambi
empagliflozin/metformin hcl	Synjardy XR
canagliflozin	Invokana
canagliflozin/metformin hcl	Invokamet
canagliflozin/metformin hcl	Invokamet XR
<b>Anti-Hypertensive Agent</b>	
<b>Angiotensin-Converting Enzyme (Ace) Inhibitor</b>	
lisinopril	Prinivil
lisinopril/hydrochlorothiazide	Prinzide
perindopril erbumine	Aceon
ramipril	Ramipril
perindopril erbumine	Perindopril Erbumine
quinapril hcl/hydrochlorothiazide	Accuretic
quinapril hcl	Accupril
trandolapril	Mavik
trandolapril/verapamil hcl	Tarka
amlodipine besylate/benazepril hcl	Lotrel
benazepril hcl	Lotensin
benazepril hcl/hydrochlorothiazide	Lotensin HCT
fosinopril sodium	Monopril
fosinopril sodium/hydrochlorothiazide	Monopril HCT
moexipril hcl	Univasc
moexipril hcl/hydrochlorothiazide	Uniretic
moexipril hcl	Moexipril
enalapril maleate	Enalapril Maleate
captopril/hydrochlorothiazide	Captopril-Hydrochlorothiazide
lisinopril/hydrochlorothiazide	Lisinopril-Hydrochlorothiazide
enalapril maleate/hydrochlorothiazide	Enalapril-Hydrochlorothiazide
quinapril hcl	Quinapril
benazepril hcl	Benazepril
moexipril hcl/hydrochlorothiazide	Moexipril-Hydrochlorothiazide
fosinopril sodium	Fosinopril
trandolapril	Trandolapril
amlodipine besylate/benazepril hcl	Amlodipine-Benazepril
captopril	Captopril
lisinopril	Lisinopril
enalaprilat dihydrate	Enalaprilat
benazepril hcl/hydrochlorothiazide	Benazepril-Hydrochlorothiazide
fosinopril sodium/hydrochlorothiazide	Fosinopril-Hydrochlorothiazide
enalapril maleate	Vasotec
enalapril maleate/hydrochlorothiazide	Vaseretic
lisinopril	Zestril
ramipril	Altace
lisinopril/hydrochlorothiazide	Zestoretic

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Report**

<b>Generic Name</b>	<b>Brand Name</b>
captopril	Capoten
quinapril hcl/hydrochlorothiazide	Quinapril-Hydrochlorothiazide
captopril/hydrochlorothiazide	Capozide
trandolapril/verapamil hcl	Trandolapril-Verapamil
quinapril hcl/hydrochlorothiazide	Quinaretic
enalapril maleate	Epaned
lisinopril	Qbrelis
perindopril arginine/amlopidine besylate	Prestalia
lisinopril/dietary supplement,comb.10	Lytensopril
lisinopril/dietary supplement,comb.10	Lytensopril-90
<b>Alpha Blocker</b>	
doxazosin mesylate	Cardura XL
doxazosin mesylate	Cardura
phenoxybenzamine hcl	Phenoxybenzamine
prazosin hcl	Minipress
terazosin hcl	Hytrin
doxazosin mesylate	Doxazosin
prazosin hcl	Prazosin
terazosin hcl	Terazosin
phentolamine mesylate	Phentolamine
phenoxybenzamine hcl	Dibenzyline
<b>Angiotensin Receptor Blocker (Arb)</b>	
losartan potassium/hydrochlorothiazide	Hyzaar
losartan potassium	Cozaar
nebivolol hcl/valsartan	Byvalson
irbesartan	Avapro
irbesartan/hydrochlorothiazide	Avalide
losartan potassium	Losartan
losartan potassium/hydrochlorothiazide	Losartan-Hydrochlorothiazide
irbesartan	Irbesartan
irbesartan/hydrochlorothiazide	Irbesartan-Hydrochlorothiazide
telmisartan	Telmisartan
telmisartan/hydrochlorothiazide	Telmisartan-Hydrochlorothiazid
eprosartan mesylate/hydrochlorothiazide	Teveten HCT
eprosartan mesylate	Teveten
valsartan/hydrochlorothiazide	Diovan HCT
valsartan	Diovan
amlodipine besylate/valsartan	Exforge
amlodipine besylate/valsartan/hydrochlorothiazide	Exforge HCT
sacubitril/valsartan	Entresto
olmesartan medoxomil/amlodipine besylate/hydrochlorothiaz	Olmesartan-Amlodipin-Hcthiazid
amlodipine besylate/olmesartan medoxomil	Amlodipine-Olmesartan
amlodipine besylate/valsartan/hydrochlorothiazide	Amlodipine-Valsartan-Hcthiazid
valsartan	Valsartan
olmesartan medoxomil	Olmesartan

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Report**

<b>Generic Name</b>	<b>Brand Name</b>
olmesartan medoxomil/hydrochlorothiazide	Olmesartan-Hydrochlorothiazide
amlodipine besylate/valsartan	Amlodipine-Valsartan
candesartan cilexetil	Atacand
candesartan cilexetil/hydrochlorothiazide	Atacand HCT
telmisartan/amlodipine besylate	Telmisartan-Amlodipine
candesartan cilexetil/hydrochlorothiazide	Candesartan-Hydrochlorothiazid
valsartan/hydrochlorothiazide	Valsartan-Hydrochlorothiazide
eprosartan mesylate	Eprosartan
telmisartan	Micardis
telmisartan/hydrochlorothiazide	Micardis HCT
telmisartan/amlodipine besylate	Twynsta
candesartan cilexetil	Candesartan
olmesartan medoxomil	Benicar
olmesartan medoxomil/hydrochlorothiazide	Benicar HCT
amlodipine besylate/olmesartan medoxomil	Azor
azilsartan medoxomil	Edarbi
azilsartan medoxomil/chlorthalidone	Edarbyclor
olmesartan medoxomil/amlodipine besylate/hydrochlorothiaz	Tribenzor
<b>Beta Blocker</b>	
carvedilol phosphate	Coreg CR
carvedilol	Coreg
betaxolol hcl	Kerlone
propranolol hcl	Inderal LA
propranolol hcl	Propranolol
metoprolol tartrate	Lopressor
metoprolol tartrate/hydrochlorothiazide	Lopressor HCT
canakinumab/pf	Ilaris (PF)
penbutolol sulfate	Levatol
carvedilol	Carvedilol
metoprolol tartrate	Metoprolol Tartrate
atenolol	Atenolol
sotalol hcl	Sotalol
nadolol	Nadolol
bisoprolol fumarate	Bisoprolol Fumarate
nadolol/bendroflumethiazide	Nadolol-Bendroflumethiazide
labetalol hcl	Labetalol
propranolol hcl	Innopran XL
metoprolol succinate	Metoprolol Succinate
bisoprolol fumarate/hydrochlorothiazide	Bisoprolol-Hydrochlorothiazide
metoprolol succinate	Toprol XL
sotalol hcl	Sorine
propranolol hcl/hydrochlorothiazide	Propranolol-Hydrochlorothiazid
propranolol hcl	Inderal
atenolol	Tenormin
atenolol/chlorthalidone	Tenoretic 50

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Report**

<b>Generic Name</b>	<b>Brand Name</b>
atenolol/chlorthalidone	Tenoretic 100
metoprolol succinate/hydrochlorothiazide	Dutoprol
pindolol	Pindolol
timolol maleate	Timolol Maleate
metoprolol tartrate/hydrochlorothiazide	Metoprolol Ta-Hydrochlorothiaz
acebutolol hcl	Acebutolol
atenolol/chlorthalidone	Atenolol-Chlorthalidone
sotalol hcl	Sotalol AF
nebivolol hcl	Bystolic
esmolol hcl	Esmolol
esmolol hcl	Brevibloc
esmolol hcl in sodium chloride, iso-osmotic	Brevibloc In Nacl (Iso-Osm)
betaxolol hcl	Betaxolol
sotalol hcl	Sotylize
nadolol	Corgard
sotalol hcl	Betapace
sotalol hcl	Betapace AF
bisoprolol fumarate/hydrochlorothiazide	Ziac
bisoprolol fumarate	Zebeta
labetalol hcl	Normodyne
labetalol hcl	Trandate
nadolol/bendroflumethiazide	Corzide
carvedilol phosphate	Carvedilol Phosphate
labetalol in dextrose 5 % in water	Labetalol In Dextrose 5 %
propranolol hcl	Hemangeol
acebutolol hcl	Sectral
metoprolol tartrate/dietary supplement,comb.10	Hypertensolol
metoprolol succinate/hydrochlorothiazide	Metoprolol Su-Hydrochlorothiaz
propranolol hcl	Inderal XL
<b>Calcium (Ca) Channel Blocker</b>	
nicardipine hcl	Cardene SR
verapamil hcl	Calan
verapamil hcl	Calan SR
verapamil hcl	Covera-HS
nimodipine	Nimotop
amlodipine besylate	Amlodipine
amlodipine besylate	Norvasc
nifedipine	Procardia
nifedipine	Procardia XL
verapamil hcl	Verapamil
diltiazem hcl	Diltiazem Hcl
diltiazem hcl	Cardizem LA
nifedipine	Adalat CC
verapamil hcl	Verelan
verapamil hcl	Verelan PM

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Report**

<b>Generic Name</b>	<b>Brand Name</b>
nicardipine hcl	Nicardipine
nifedipine	Nifedical XL
nifedipine	Nifediac CC
nifedipine	Nifedipine
isradipine	Dynacirc CR
felodipine	Plendil
diltiazem hcl	Cardizem
diltiazem hcl	Cardizem CD
diltiazem hcl	Tiazac
nisoldipine	Nisoldipine
felodipine	Felodipine
diltiazem hcl	Cartia XT
diltiazem hcl	Diltia XT
nimodipine	Nimodipine
nifedipine	Afeditab CR
nicardipine in sodium chloride, iso-osmotic	Cardene IV In Sodium Chloride
nicardipine in dextrose, iso-osmotic	Cardene IV In Dextrose
clevidipine butyrate	Cleviprex
verapamil hcl	Isoptin SR
diltiazem hcl/dextrose 5 % in water	Diltiazem In Dextrose 5 %
isradipine	Isradipine
nimodipine	Nymalize
nicardipine hcl	Cardene IV
nicardipine hcl in 0.9 % sodium chloride	Nicardipine In 0.9 % Nacl
diltiazem hcl	Dilacor XR
diltiazem hcl	Matzim LA
isradipine	Dynacirc
nisoldipine	Sular
diltiazem hcl	Dilt-Cd
diltiazem hcl	Dilt-Xr
diltiazem hcl	Diltzac ER
diltiazem hcl	Taztia XT
diltiazem hcl in 0.9 % sodium chloride	Diltiazem Hcl In 0.9% Nacl
nicardipine in 5 % dextrose in water	Nicardipine In 5 % Dextrose
<b>Direct Vasodilator</b>	
hydralazine hcl	Hydralazine
nitroprusside sodium	Nitropress
minoxidil	Minoxidil
nitroprusside sodium	Sodium Nitroprusside
nitroprusside sodium in 0.9 % sodium chloride	Nipride RTU

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Report**

<b>Generic Name</b>	<b>Brand Name</b>
<b>Loop Diuretic</b>	
bumetanide	Bumex
torseamide	Demadex
ethacrynic acid	Edecrin
furosemide	Lasix
torseamide	Torseamide
ethacrynic acid	Ethacrynic Acid
furosemide	Furosemide
bumetanide	Bumetanide
furosemide in 0.9 % sodium chloride	Furosemide In 0.9 % Nacl
ethacrynate sodium	Sodium Edecrin
ethacrynate sodium	Ethacrynate Sodium
furosemide/dextrose 5 % in water	Furosemide In Dextrose 5 %
<b>Aldosterone Receptor Agonist (Ara)</b>	
spironolactone	Aldactone
eplerenone	Inspra
eplerenone	Eplerenone
spironolactone	Spironolactone
spironolactone/hydrochlorothiazide	Aldactazide
spironolactone	Carospir
spironolactone/hydrochlorothiazide	Spironolacton-Hydrochlorothiaz
<b>Non-Ara Potassium (K) Sparing Diuretic</b>	
triamterene/hydrochlorothiazide	Dyazide
triamterene/hydrochlorothiazide	Triamterene-Hydrochlorothiazid
triamterene/hydrochlorothiazide	Maxzide
triamterene/hydrochlorothiazide	Maxzide-25mg
amiloride hcl/hydrochlorothiazide	Amiloride-Hydrochlorothiazide
amiloride hcl	Midamor
amiloride hcl	Amiloride
triamterene	Dyrenium
<b>Thiazide Diuretic</b>	
lisinopril/hydrochlorothiazide	Prinzide
losartan potassium/hydrochlorothiazide	Hyzaar
chlorothiazide	Diuril
triamterene/hydrochlorothiazide	Dyazide
irbesartan/hydrochlorothiazide	Avalide
spironolactone/hydrochlorothiazide	Aldactazide
losartan potassium/hydrochlorothiazide	Losartan-Hydrochlorothiazide
irbesartan/hydrochlorothiazide	Irbesartan-Hydrochlorothiazide
telmisartan/hydrochlorothiazide	Telmisartan-Hydrochlorothiazid
quinapril hcl/hydrochlorothiazide	Accuretic
eprosartan mesylate/hydrochlorothiazide	Teveten HCT
valsartan/hydrochlorothiazide	Diovan HCT
benazepril hcl/hydrochlorothiazide	Lotensin HCT
metoprolol tartrate/hydrochlorothiazide	Lopressor HCT

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Report**

<b>Generic Name</b>	<b>Brand Name</b>
aliskiren hemifumarate/hydrochlorothiazide	Tekturna HCT
amlodipine besylate/valsartan/hydrochlorothiazide	Exforge HCT
aliskiren hemifumarate/amlodipine/hydrochlorothiazide	Amturnide
fosinopril sodium/hydrochlorothiazide	Monopril HCT
moexipril hcl/hydrochlorothiazide	Uniretic
captopril/hydrochlorothiazide	Captopril-Hydrochlorothiazide
lisinopril/hydrochlorothiazide	Lisinopril-Hydrochlorothiazide
enalapril maleate/hydrochlorothiazide	Enalapril-Hydrochlorothiazide
hydrochlorothiazide	Hydrochlorothiazide
olmesartan medoxomil/amlodipine besylate/hydrochlorothiaz	Olmesartan-Amlodipin-Hcthiazid
moexipril hcl/hydrochlorothiazide	Moexipril-Hydrochlorothiazide
amlodipine besylate/valsartan/hydrochlorothiazide	Amlodipine-Valsartan-Hcthiazid
olmesartan medoxomil/hydrochlorothiazide	Olmesartan-Hydrochlorothiazide
nadolol/bendroflumethiazide	Nadolol-Bendroflumethiazide
chlorothiazide	Chlorothiazide
triamterene/hydrochlorothiazide	Triamterene-Hydrochlorothiazid
benazepril hcl/hydrochlorothiazide	Benazepril-Hydrochlorothiazide
metolazone	Metolazone
fosinopril sodium/hydrochlorothiazide	Fosinopril-Hydrochlorothiazide
bisoprolol fumarate/hydrochlorothiazide	Bisoprolol-Hydrochlorothiazide
candesartan cilexetil/hydrochlorothiazide	Atacand HCT
enalapril maleate/hydrochlorothiazide	Vaseretic
indapamide	Indapamide
propranolol hcl/hydrochlorothiazide	Propranolol-Hydrochlorothiazid
lisinopril/hydrochlorothiazide	Zestoretic
atenolol/chlorthalidone	Tenoretic 50
atenolol/chlorthalidone	Tenoretic 100
metoprolol succinate/hydrochlorothiazide	Dutoprol
clonidine hcl/chlorthalidone	Clorpres
spironolactone/hydrochlorothiazide	Spironolacton-Hydrochlorothiaz
methyclothiazide	Methyclothiazide
chlorthalidone	Chlorthalidone
metoprolol tartrate/hydrochlorothiazide	Metoprolol Ta-Hydrochlorothiaz
triamterene/hydrochlorothiazide	Maxzide
triamterene/hydrochlorothiazide	Maxzide-25mg
methyldopa/hydrochlorothiazide	Methyldopa-Hydrochlorothiazide
quinapril hcl/hydrochlorothiazide	Quinapril-Hydrochlorothiazide
amiloride hcl/hydrochlorothiazide	Amiloride-Hydrochlorothiazide
atenolol/chlorthalidone	Atenolol-Chlorthalidone
candesartan cilexetil/hydrochlorothiazide	Candesartan-Hydrochlorothiazid
valsartan/hydrochlorothiazide	Valsartan-Hydrochlorothiazide
chlorothiazide sodium	Chlorothiazide Sodium
telmisartan/hydrochlorothiazide	Micardis HCT
olmesartan medoxomil/hydrochlorothiazide	Benicar HCT
hydralazine hcl/hydrochlorothiazide	Hydra-Zide

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Report**

<b>Generic Name</b>	<b>Brand Name</b>
captopril/hydrochlorothiazide	Capozide
bisoprolol fumarate/hydrochlorothiazide	Ziac
quinapril hcl/hydrochlorothiazide	Quinaretic
hydrochlorothiazide	Microzide
metolazone	Zaroxolyn
methyclothiazide	Enduron
nadolol/bendroflumethiazide	Corzide
chlorthalidone	Thalitone
olmesartan medoxomil/amlodipine besylate/hydrochlorothiazide	Tribenzor
chlorothiazide sodium	Diuril IV
metoprolol succinate/hydrochlorothiazide	Metoprolol Su-Hydrochlorothiaz
<b>Renin Inhibitor</b>	
aliskiren hemifumarate	Tekturna
aliskiren hemifumarate/hydrochlorothiazide	Tekturna HCT
aliskiren/valsartan	Valturna
aliskiren hemifumarate/amlodipine besylate	Tekamlo
aliskiren hemifumarate/amlodipine/hydrochlorothiazide	Amturnide
<b>Central Alpha-2 Receptor Agonist</b>	
clonidine hcl	Clonidine Hcl
clonidine hcl/chlorthalidone	Clorpres
methyldopa/hydrochlorothiazide	Methyldopa-Hydrochlorothiazide
clonidine	Clonidine
clonidine hcl	Catapres
clonidine	Catapres-TTS-1
clonidine	Catapres-TTS-2
clonidine	Catapres-TTS-3
clonidine hcl	Nexiclon XR
<b>Lipid-Lowering Agent</b>	
pitavastatin calcium	Livalo
pravastatin sodium	Pravachol
simvastatin	Zocor
lovastatin	Mevacor
colestipol hcl	Colestid
colestipol hcl	Colestid Flavored
alirocumab	Praluent Pen
alirocumab	Praluent Syringe
amlodipine besylate/atorvastatin calcium	Caduet
atorvastatin calcium	Lipitor
gemfibrozil	Lopid
niacin/lovastatin	Advicor
niacin	Niaspan Extended-Release
fenofibric acid (choline)	Trilipix
fenofibrate nanocrystallized	Tricor
niacin/simvastatin	Simcor
fluvastatin sodium	Lescol

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Report**

<b>Generic Name</b>	<b>Brand Name</b>
fluvastatin sodium	Lescol XL
lovastatin	Lovastatin
gemfibrozil	Gemfibrozil
pravastatin sodium	Pravastatin
fenofibrate nanocrystallized	Fenofibrate Nanocrystallized
atorvastatin calcium	Atorvastatin
simvastatin	Simvastatin
niacin	Niacin
fluvastatin sodium	Fluvastatin
rosuvastatin calcium	Rosuvastatin
fenofibrate,micronized	Fenofibrate Micronized
ezetimibe/simvastatin	Ezetimibe-Simvastatin
fenofibric acid (choline)	Fenofibric Acid (Choline)
fenofibrate	Fenofibrate
colestipol hcl	Colestipol
cholestyramine/aspartame	Cholestyramine Light
cholestyramine (with sugar)	Cholestyramine (With Sugar)
cholestyramine/aspartame	Prevalite
niacin	Niacor
rosuvastatin calcium	Crestor
amlodipine besylate/atorvastatin calcium	Amlodipine-Atorvastatin
ezetimibe	Ezetimibe
ezetimibe/simvastatin	Vytorin 10-40
ezetimibe/simvastatin	Vytorin 10-20
ezetimibe/simvastatin	Vytorin 10-10
fenofibric acid	Fibricor
ezetimibe	Zetia
colesevelam hcl	Welchol
ezetimibe/simvastatin	Vytorin 10-80
fenofibrate,micronized	Antara
simvastatin	Flolipid
cholestyramine (with sugar)	Questran
cholestyramine/aspartame	Questran Light
fenofibrate	Fenoglide
icosapent ethyl	Vascepa
fenofibric acid	Fenofibric Acid
lovastatin	Altprev
fenofibrate,micronized	Lofibra
fenofibrate nanocrystallized	Triglide
evolcumab	Repatha Syringe
evolcumab	Repatha Sureclick
evolcumab	Repatha Pushtronex
fenofibrate	Lofibra
mipomersen sodium	Kynamro
ezetimibe/atorvastatin calcium	Liptruzet

**Appendix G. List of Generic and Brand Names of Medical Products Used to Define Covariates in this Report**

---

<b>Generic Name</b>	<b>Brand Name</b>
fenofibrate	Lipofen
lomitapide mesylate	Juxtapid

**Appendix H.1. Specifications for Parameters in this Request, Comparison 1; Saxagliptin vs Sitagliptin, Comparison 2; Saxagliptin vs Pioglitazone**

This request utilized the Cohort Identification and Descriptive Analysis (CIDA) module, with Propensity Score Matching (PSM) Analysis, version 7.3.4 to recreate a protocol-based assessment (PBA) of investigation on acute myocardial infarction (AMI) and hospitalized heart failure (hHF) following saxagliptin or sitagliptin use in comparison to long-acting insulin, pioglitazone, and second-generation sulfonyleureas using updated data and CIDA features.

**Query Period:** See specifications for monitoring periods for each comparison  
**Coverage Requirement:** Medical and Drug Coverage  
**Pre-exposure enrollment (days):** 12 months (365 days)  
**Enrollment Gap:** 45 days  
**Sex:** Female or Male only  
**Age Groups:** 18-29, 30-44, 45-54, 55-64, 65-74, 75-84, 85+ years  
 18-64, 65+ years (PS matching only)  
**Patient-level Return:** No  
**Envelope Macro Use:** No  
**Freeze Data:** Yes

Drug/Exposure Definition

	Comparison 1		Comparison 2	
	Exposure of Interest Group	Reference Group	Exposure of Interest Group	Reference Group
<b>Monitoring Period Start</b>	8/1/2009		8/1/2009	
<b>Monitoring Period End</b>	9/30/2015		9/30/2015	
<b>Exposure</b>	Saxagliptin	Sitagliptin	Saxagliptin	Pioglitazone
<b>Incidence with Respect to</b>	Saxagliptin, sitagliptin	Saxagliptin, sitagliptin	Saxagliptin, pioglitazone	Saxagliptin, pioglitazone
<b>Washout (days)</b>	365	365	365	365
<b>Exposure Episode Truncation Criteria</b>	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of sitagliptin	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of sitagliptin	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of sitagliptin	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of sitagliptin
<b>Cohort Definition</b>	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)
<b>Exposure Episode Gap</b>	33% previous days' supply			
<b>Exposure Extension Period</b>	12 days	12 days	12 days	12 days
<b>Minimum Episode Duration</b>	1 day	1 day	1 day	1 day
<b>Minimum Days Supplied</b>	1 day	1 day	1 day	1 day

Appendix H.1. Specifications for Parameters in this Request, Comparison 1; Saxagliptin vs Sitagliptin, Comparison 2; Saxagliptin vs Pioglitazone

Outcome Definition	<b>Event/Outcome</b>	AMI	AMI	AMI	AMI
	<b>Care Setting/Diagnosis Position</b>	Inpatient Primary (IPP)	IPP	IPP	IPP
	<b>Event Incidence with Respect to</b>	AMI	AMI	AMI	AMI
	<b>Event Incidence Criteria Care Setting / Diagnosis Position</b>	IPP	IPP	IPP	IPP
	<b>Event Washout (days)</b>	60	60	60	60
	<b>Blackout Period</b>	0 days	0 days	0 days	0 days
Inclusion/Exclusion Criteria	<b>Conditions</b>	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)
	<b>Include or Exclude</b>	Inclusion	Inclusion	Inclusion	Inclusion
	<b>Care Setting/Diagnosis Position</b>	Any	Any	Any	Any
	<b>Lookback Period</b>	(-365, -1)	(-365, -1)	(-365, -1)	(-365, -1)
	<b>Number of Code Occurrences</b>	1 instance	1 instance	1 instance	1 instance
Inclusion/Exclusion Criteria	<b>Conditions</b>	Gestational diabetes	Gestational diabetes	Gestational diabetes	Gestational diabetes
	<b>Include or Exclude</b>	Exclusion	Exclusion	Exclusion	Exclusion
	<b>Care Setting/Diagnosis Position</b>	Any	Any	Any	Any
	<b>Lookback Period</b>	(-365, 0)	(-365, 0)	(-365, 0)	(-365, 0)
	<b>Number of Code Occurrences</b>	1 instance	1 instance	1 instance	1 instance
Inclusion/Exclusion Criteria	<b>Conditions</b>			Congestive heart failure	Congestive heart failure
	<b>Include or Exclude</b>			Exclusion	Exclusion
	<b>Care Setting/Diagnosis Position</b>			Any	Any
	<b>Lookback Period</b>			(-365, -1)	(-365, -1)
	<b>Number of Code Occurrences</b>			1 instance	1 instance

Appendix H.1. Specifications for Parameters in this Request, Comparison 1; Saxagliptin vs Sitagliptin, Comparison 2; Saxagliptin vs Pioglitazone

Stockpiling Algorithm	Same Day Dispensing (Days Supplied)	Sum	Sum	Sum	Sum
	Same Day Dispensing (Amount Supplied)	Sum	Sum	Sum	Sum
	Range of Allowable Days Supplied	Max 120 Days (inclusive)	Max 120 Days (inclusive)	Max 120 Days (inclusive)	Max 120 Days (inclusive)
	Range of Allowable Amount Supplied	N/A	N/A	N/A	N/A
	Overlap Percentage Processing	Default	Default	Default	Default
Baseline Covariates/Utilization/Comorbidity Score	Covariates	(See Covariates table) inpatient (IP*), outpatient (AV* only)		(See Covariates table) inpatient (IP*), outpatient (AV* only)	
	Care Setting/Diagnosis Position	(Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)		(Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)	
	Covariate Evaluation Window (days)	(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated		(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated	
	Comorbidity Score Evaluation window (days)	(-365, -1)		(-365, -1)	
	Medical Utilization Evaluation Window	(-365, -1)		(-365, -1)	
	Medical Utilization Care setting	IP, Inpatient stay (IS), AV, Other ambulatory visit (OA), Emergency department (ED)		IP, IS, AV, OA, ED	
	Drug Utilization Evaluation Window	(-365, -1)		(-365, -1)	

Appendix H.1. Specifications for Parameters in this Request, Comparison 1; Saxagliptin vs Sitagliptin, Comparison 2; Saxagliptin vs Pioglitazone

Propensity Score Analysis/Subgroup Analysis	<b>Analysis type</b>	Propensity score analysis	Propensity score analysis
	<b>Perform HDPS Analysis</b>	No	No
	<b>Matching Ratio</b>	1:1	1:1
	<b>Matching Caliper Settings</b>	0.01	0.01
	<b>Subgroup Analyses</b>	Prior cardiovascular disease (Yes, No)	Prior cardiovascular disease (Yes, No)
		Age groups (00-64, 65+ years)	Age groups (00-64, 65+ years)
Sex (Male, Female)		Sex (Male, Female)	
<b>Population used for rematching within subgroups</b>	Total population	Total population	

**Appendix H.2. Specifications for Parameters in this Request, Comparison 3; Saxagliptin vs Long-acting insulins, Comparison 4; Saxagliptin vs Second-generation sulfonylureas**

This request utilized the Cohort Identification and Descriptive Analysis (CIDA) module, with Propensity Score Matching (PSM) Analysis, version 7.3.4 to recreate a protocol-based assessment (PBA) of investigation on acute myocardial infarction (AMI) and hospitalized heart failure (hHF) following saxagliptin or sitagliptin use in comparison to long-acting insulin, pioglitazone, and second-generation sulfonylureas using updated data and CIDA features.

**Query Period:** See specifications for monitoring periods for each comparison  
**Coverage Requirement:** Medical and Drug Coverage  
**Pre-exposure enrollment (days):** 12 months (365 days)  
**Enrollment Gap:** 45 days  
**Sex:** Female or Male only  
**Age Groups:** 18-29, 30-44, 45-54, 55-64, 65-74, 75-84, 85+ years  
 18-64, 65+ years (PS matching only)  
**Patient-level Return:** No  
**Envelope Macro Use:** No  
**Freeze Data:** Yes

Drug/Exposure Definition

	Comparison 3		Comparison 4	
	Exposure of Interest Group	Reference Group	Exposure of Interest Group	Reference Group
<b>Monitoring Period Start</b>	8/1/2009		8/1/2009	
<b>Monitoring Period End</b>	9/30/2015		9/30/2015	
<b>Exposure</b>	Saxagliptin	Long-acting insulins	Saxagliptin	Second-generation sulfonylureas
<b>Incidence with Respect to</b>	Saxagliptin, long-acting insulins	Saxagliptin, long-acting insulins	Saxagliptin, second-generation sulfonylureas	Saxagliptin, second-generation sulfonylureas
<b>Washout (days)</b>	365 days	365 days	365 days	365 days
<b>Exposure Episode Truncation Criteria</b>	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of long-acting insulins	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of saxagliptin	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of second-generation sulfonylureas	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of saxagliptin
<b>Cohort Definition</b>	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)
<b>Exposure Episode Gap</b>	33% previous days' supply	33% previous days' supply	33% previous days' supply	33% previous days' supply
<b>Exposure Extension Period</b>	12 days	12 days	12 days	12 days
<b>Minimum Episode Duration</b>	1 day	1 day	1 day	1 day
<b>Minimum Days Supplied</b>	1 day	1 day	1 day	1 day

Appendix H.2. Specifications for Parameters in this Request, Comparison 3; Saxagliptin vs Long-acting insulins, Comparison 4; Saxagliptin vs Second-generation sulfonylureas

Outcome Definition	Event/Outcome	AMI	AMI	AMI	AMI
	Care Setting/Diagnosis Position	Inpatient Primary (IPP)	IPP	IPP	IPP
	Event Incidence with Respect to	AMI	AMI	AMI	AMI
	Event Incidence Criteria Care Setting / Diagnosis Position	IPP	IPP	IPP	IPP
	Event Washout (days)	60 days	60 days	60 days	60 days
	Blackout Period	0 days	0 days	0 days	0 days
Inclusion/Exclusion Criteria	Conditions	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)
	Include or Exclude	Inclusion	Inclusion	Inclusion	Inclusion
	Care Setting/Diagnosis Position	Any	Any	Any	Any
	Lookback Period	(-365, -1)	(-365, -1)	(-365, -1)	(-365, -1)
	Number of Code Occurrences	1 instance	1 instance	1 instance	1 instance
Inclusion/Exclusion Criteria	Conditions	Gestational diabetes	Gestational diabetes	Gestational diabetes	Gestational diabetes
	Include or Exclude	Exclusion	Exclusion	Exclusion	Exclusion
	Care Setting/Diagnosis Position	Any	Any	Any	Any
	Lookback Period	(-365, 0)	(-365, 0)	(-365, 0)	(-365, 0)
	Number of Code Occurrences	1 instance	1 instance	1 instance	1 instance
Inclusion/Exclusion Criteria	Conditions	Short-acting insulin use only (defined as: Only one diabetes medication class (see Covariates table) AND this class is a short-acting insulin dispensing)	Short-acting insulin use only (defined as: Only one diabetes medication class (see Covariates table) AND this class is a short-acting insulin dispensing)		
	Include or Exclude	Exclusion	Exclusion		
	Care Setting/Diagnosis Position	Any	Any		
	Lookback Period	(-365, -1)	(-365, -1)		
	Number of Code Occurrences	1 instance	1 instance		

Appendix H.2. Specifications for Parameters in this Request, Comparison 3; Saxagliptin vs Long-acting insulins, Comparison 4; Saxagliptin vs Second-generation sulfonylureas

Stockpiling Algorithm	<b>Same Day Dispensing (Days Supplied)</b>	Sum	Sum	Sum	Sum
	<b>Same Day Dispensing (Amount Supplied)</b>	Sum	Sum	Sum	Sum
	<b>Range of Allowable Days Supplied</b>	Max 120 Days (inclusive)	Max 120 Days (inclusive)	Max 120 Days (inclusive)	Max 120 Days (inclusive)
	<b>Range of Allowable Amount Supplied</b>	N/A	N/A	N/A	N/A
	<b>Overlap Percentage Processing</b>	Default	Default	Default	Default
Baseline Covariates/Utilization/Comorbidity Score	<b>Covariates</b>	(See Covariates table)		(See Covariates table)	
	<b>Care Setting/Diagnosis Position</b>	inpatient (IP*), outpatient (AV* only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)		inpatient (IP*), outpatient (AV* only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)	
	<b>Covariate Evaluation Window (days)</b>	(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated		(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated	
	<b>Comorbidity Score Evaluation window (days)</b>	(-365, -1)		(-365, -1)	
	<b>Medical Utilization Evaluation Window</b>	(-365, -1)		(-365, -1)	
	<b>Medical Utilization Care setting</b>	IP, Inpatient stay (IS), AV, Other ambulatory visit (OA), Emergency department (ED)		IP, IS, AV, OA, ED	
	<b>Drug Utilization Evaluation Window</b>	(-365, -1)		(-365, -1)	

Appendix H.2. Specifications for Parameters in this Request, Comparison 3; Saxagliptin vs Long-acting insulins, Comparison 4; Saxagliptin vs Second-generation sulfonylureas

Propensity Score Analysis/Subgroup Analysis	<b>Analysis type</b>	Propensity score analysis	Propensity score analysis
	<b>Perform HDPS Analysis</b>	No	No
	<b>Matching Ratio</b>	1:1	1:1
	<b>Matching Caliper Settings</b>	0.01	0.01
	<b>Subgroup Analyses</b>	Prior cardiovascular disease (Yes, No)	Prior cardiovascular disease (Yes, No)
		Age groups (00-64, 65+ years)	Age groups (00-64, 65+ years)
Sex (Male, Female)		Sex (Male, Female)	
<b>Population used for rematching within subgroups</b>	Total population	Total population	

**Appendix H.3. Specifications for Parameters in this Request, Comparison 5; Sitagliptin vs Pioglitazone, Comparison 6; Sitagliptin vs Long-acting insulins**

This request utilized the Cohort Identification and Descriptive Analysis (CIDA) module, with Propensity Score Matching (PSM) Analysis, version 7.3.4 to recreate a protocol-based assessment (PBA) of investigation on acute myocardial infarction (AMI) and hospitalized heart failure (hHF) following saxagliptin or sitagliptin use in comparison to long-acting insulin, pioglitazone, and second-generation sulfonyleureas using updated data and CIDA features.

**Query Period:** See specifications for monitoring periods for each comparison  
**Coverage Requirement:** Medical and Drug Coverage  
**Pre-exposure enrollment (days):** 12 months (365 days)  
**Enrollment Gap:** 45 days  
**Sex:** Female or Male only  
**Age Groups:** 18-29, 30-44, 45-54, 55-64, 65-74, 75-84, 85+ years  
 18-64, 65+ years (PS matching only)  
**Patient-level Return:** No  
**Envelope Macro Use:** No  
**Freeze Data:** Yes

Drug/Exposure Definition

	Comparison 5		Comparison 6	
	Exposure of Interest Group	Reference Group	Exposure of Interest Group	Reference Group
<b>Monitoring Period Start</b>	10/1/2006		10/1/2006	
<b>Monitoring Period End</b>	9/30/2015		9/30/2015	
<b>Exposure</b>	Sitagliptin	Pioglitazone	Sitagliptin	Long-acting insulins
<b>Incidence with Respect to</b>	Sitagliptin, pioglitazone	Sitagliptin, pioglitazone	Sitagliptin, long-acting insulins	Sitagliptin, long-acting insulins
<b>Washout (days)</b>	365 days	365 days	365 days	365 days
<b>Exposure Episode Truncation Criteria</b>	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of pioglitazone	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of sitagliptin	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of long-acting insulins	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of sitagliptin
<b>Cohort Definition</b>	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)
<b>Exposure Episode Gap</b>	33% previous days' supply	33% previous days' supply	33% previous days' supply	33% previous days' supply
<b>Exposure Extension Period</b>	12 days	12 days	12 days	12 days
<b>Minimum Episode Duration</b>	1 day	1 day	1 day	1 day
<b>Minimum Days Supplied</b>	1 day	1 day	1 day	1 day

Appendix H.3. Specifications for Parameters in this Request, Comparison 5; Sitagliptin vs Pioglitazone, Comparison 6; Sitagliptin vs Long-acting insulins

Outcome Definition	<b>Event/Outcome</b>	AMI	AMI	AMI	AMI
	<b>Care Setting/Diagnosis Position</b>	Inpatient Primary (IPP)	IPP	IPP	IPP
	<b>Event Incidence with Respect to</b>	AMI	AMI	AMI	AMI
	<b>Event Incidence Criteria Care Setting / Diagnosis Position</b>	IPP	IPP	IPP	IPP
	<b>Event Washout (days)</b>	60 days	60 days	60 days	60 days
	<b>Blackout Period</b>	0 days	0 days	0 days	0 days
	Inclusion/Exclusion Criteria	<b>Conditions</b>	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)
<b>Include or Exclude</b>		Inclusion	Inclusion	Inclusion	Inclusion
<b>Care Setting/Diagnosis Position</b>		Any	Any	Any	Any
<b>Lookback Period</b>		(-365, -1)	(-365, -1)	(-365, -1)	(-365, -1)
<b>Number of Code Occurrences</b>		1 instance	1 instance	1 instance	1 instance
Inclusion/Exclusion Criteria	<b>Conditions</b>	Gestational diabetes	Gestational diabetes	Gestational diabetes	Gestational diabetes
	<b>Include or Exclude</b>	Exclusion	Exclusion	Exclusion	Exclusion
	<b>Care Setting/Diagnosis Position</b>	Any	Any	Any	Any
	<b>Lookback Period</b>	(-365, 0)	(-365, 0)	(-365, 0)	(-365, 0)
	<b>Number of Code Occurrences</b>	1 instance	1 instance	1 instance	1 instance
Inclusion/Exclusion Criteria	<b>Conditions</b>	Congestive heart failure	Congestive heart failure	Short-acting insulin use only (defined as: Only one diabetes medication class (see Covariates table) AND this class is a short-acting insulin dispensing)	Short-acting insulin use only (defined as: Only one diabetes medication class (see Covariates table) AND this class is a short-acting insulin dispensing)
	<b>Include or Exclude</b>	Exclusion	Exclusion	Exclusion	Exclusion
	<b>Care Setting/Diagnosis Position</b>	Any	Any	Any	Any
	<b>Lookback Period</b>	(-365, -1)	(-365, -1)	(-365, -1)	(-365, -1)
	<b>Number of Code Occurrences</b>	1 instance	1 instance	1 instance	1 instance

Appendix H.3. Specifications for Parameters in this Request, Comparison 5; Sitagliptin vs Pioglitazone, Comparison 6; Sitagliptin vs Long-acting insulins

Stockpiling Algorithm	<b>Same Day Dispensing (Days Supplied)</b>	Sum	Sum	Sum	Sum
	<b>Same Day Dispensing (Amount Supplied)</b>	Sum	Sum	Sum	Sum
	<b>Range of Allowable Days Supplied</b>	Max 120 Days (inclusive)	Max 120 Days (inclusive)	Max 120 Days (inclusive)	Max 120 Days (inclusive)
	<b>Range of Allowable Amount Supplied</b>	N/A	N/A	N/A	N/A
	<b>Overlap Percentage Processing</b>	Default	Default	Default	Default
Baseline Covariates/Utilization/Comorbidity Score	<b>Covariates</b>	(See Covariates table)		(See Covariates table)	
	<b>Care Setting/Diagnosis Position</b>	inpatient (IP*), outpatient (AV* only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)		inpatient (IP*), outpatient (AV* only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)	
	<b>Covariate Evaluation Window (days)</b>	(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated		(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated	
	<b>Comorbidity Score Evaluation window (days)</b>	(-365, -1)		(-365, -1)	
	<b>Medical Utilization Evaluation Window</b>	(-365, -1)		(-365, -1)	
	<b>Medical Utilization Care setting</b>	IP, Inpatient stay (IS), AV, Other ambulatory visit (OA), Emergency department (ED)		IP, IS, AV, OA, ED	
	<b>Drug Utilization Evaluation Window</b>	(-365, -1)		(-365, -1)	

Appendix H.3. Specifications for Parameters in this Request, Comparison 5; Sitagliptin vs Pioglitazone, Comparison 6; Sitagliptin vs Long-acting insulins

Propensity Score Analysis/Subgroup Analysis	<b>Analysis type</b>	Propensity score analysis	Propensity score analysis
	<b>Perform HDPS Analysis</b>	No	No
	<b>Matching Ratio</b>	1:1	1:1
	<b>Matching Caliper Settings</b>	0.01	0.01
	<b>Subgroup Analyses</b>	<p>Prior cardiovascular disease (Yes, No)</p> <p>Age groups (00-64, 65+ years)</p> <p>Sex (Male, Female)</p>	<p>Prior cardiovascular disease (Yes, No)</p> <p>Age groups (00-64, 65+ years)</p> <p>Sex (Male, Female)</p>
	<b>Population used for rematching within subgroups</b>	Total population	Total population

**Appendix H.4. Specifications for Parameters in this Request, Comparison 7; Sitagliptin vs Second-generation sulfonylureas**

This request utilized the Cohort Identification and Descriptive Analysis (CIDA) module, with Propensity Score Matching (PSM) Analysis, version 7.3.4 to recreate a protocol-based assessment (PBA) of investigation on acute myocardial infarction (AMI) and hospitalized heart failure (hHF) following saxagliptin or sitagliptin use in comparison to long-acting insulin, pioglitazone, and second-generation sulfonylureas using updated data and CIDA features.

**Query Period:** See specifications for monitoring periods for each comparison  
**Coverage Requirement:** Medical and Drug Coverage  
**Pre-exposure enrollment (days):** 12 months (365 days)  
**Enrollment Gap:** 45 days  
**Sex:** Female or Male only  
**Age Groups:** 18-29, 30-44, 45-54, 55-64, 65-74, 75-84, 85+ years  
 18-64, 65+ years (PS matching only)  
**Patient-level Return:** No  
**Envelope Macro Use:** No  
**Freeze Data:** Yes

Drug/Exposure Definition

	<b>Comparison 7</b>	
	<b>Exposure of Interest Group</b>	<b>Reference Group</b>
<b>Monitoring Period Start</b>	10/1/2006	
<b>Monitoring Period End</b>	9/30/2015	
<b>Exposure</b>	Sitagliptin	Second-generation sulfonylureas
<b>Incidence with Respect to</b>	Sitagliptin, second-generation sulfonylureas	Sitagliptin, second-generation sulfonylureas
<b>Washout (days)</b>	365	365
<b>Exposure Episode Truncation Criteria</b>	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of second-generation sulfonylureas	Death, Query end date, End of exposure use, Occurrence of first AMI, Use of sitagliptin
<b>Cohort Definition</b>	Only the first valid treatment episode during the query period (01) Only the first valid treatment episode during the query period (01)	
<b>Exposure Episode Gap</b>	33% previous days' supply	33% previous days' supply
<b>Exposure Extension Period</b>	12 days	12 days
<b>Minimum Episode Duration</b>	1 day	1 day
<b>Minimum Days Supplied</b>	1 day	1 day

Appendix H.4. Specifications for Parameters in this Request, Comparison 7; Sitagliptin vs Second-generation sulfonylureas

Outcome Definition	Event/Outcome	AMI	AMI
	Care Setting/Diagnosis Position	Inpatient Primary (IPP)	IPP
	Event Incidence with Respect to	AMI	AMI
	Event Incidence Criteria		
	Care Setting / Diagnosis Position	IPP	IPP
	Event Washout (days)	60	60
	Blackout Period	0 days	0 days
Inclusion/ Exclusion Criteria	Conditions	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)
	Include or Exclude	Inclusion	Inclusion
	Care Setting/Diagnosis Position	Any	Any
	Lookback Period	(-365, -1)	(-365, -1)
	Number of Code Occurrences	1 instance	1 instance
Inclusion/ Exclusion Criteria	Conditions	Gestational diabetes	Gestational diabetes
	Include or Exclude	Exclusion	Exclusion
	Care Setting/Diagnosis Position	Any	Any
	Lookback Period	(-365, 0)	(-365, 0)
	Number of Code Occurrences	1 instance	1 instance
Inclusion/ Exclusion Criteria	Conditions		
	Include or Exclude		
	Care Setting/Diagnosis Position		
	Lookback Period		
	Number of Code Occurrences		

Appendix H.4. Specifications for Parameters in this Request, Comparison 7; Sitagliptin vs Second-generation sulfonylureas

Stockpiling Algorithm	Same Day Dispensing (Days Supplied)	Sum	Sum
	Same Day Dispensing (Amount Supplied)	Sum	Sum
	Range of Allowable Days Supplied	Max 120 Days (inclusive)	Max 120 Days (inclusive)
	Range of Allowable Amount Supplied	N/A	N/A
	Overlap Percentage Processing	Default	Default
Baseline Covariates/Utilization/Comorbidity Score	Covariates	(See Covariates table)	
	Care Setting/Diagnosis Position	inpatient (IP*), outpatient (AV* only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)	
	Covariate Evaluation Window (days)	(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated	
	Comorbidity Score Evaluation window (days)	(-365, -1)	
	Medical Utilization Evaluation Window	(-365, -1)	
	Medical Utilization Care setting	IP, Inpatient stay (IS), AV, Other ambulatory visit (OA), Emergency department (ED)	
	Drug Utilization Evaluation Window	(-365, -1)	

Appendix H.4. Specifications for Parameters in this Request, Comparison 7; Sitagliptin vs Second-generation sulfonylureas

Propensity Score Analysis/Subgroup Analysis	<b>Analysis type</b>	Propensity score analysis
	<b>Perform HDPS Analysis</b>	No
	<b>Matching Ratio</b>	1:1
	<b>Matching Caliper Settings</b>	0.01
	<b>Subgroup Analyses</b>	<p>Prior cardiovascular disease (Yes, No)</p> <p>Age groups (00-64, 65+ years)</p> <p>Sex (Male, Female)</p>
<b>Population used for rematching within subgroups</b>	Total population	



Appendix H.5. Specifications for Parameters in this Request, Comparison 8; Saxagliptin vs Sitagliptin, Comparison 9; Saxagliptin vs Pioglitazone

Outcome Definition	<b>Event/Outcome</b>	hHF	hHF	hHF	hHF
	<b>Care Setting/Diagnosis Position</b>	Inpatient Primary (IPP)	IPP	IPP	IPP
	<b>Event Incidence with Respect to</b>	hHF or AMI	hHF or AMI	hHF or AMI	hHF or AMI
	<b>Event Incidence Criteria Care Setting / Diagnosis Position</b>	IPP	IPP	IPP	IPP
	<b>Event Washout (days)</b>	60 days	60 days	60 days	60 days
	<b>Blackout Period</b>	0 days	0 days	0 days	0 days
Inclusion/ Exclusion Criteria	<b>Conditions</b>	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)
	<b>Include or Exclude</b>	Inclusion	Inclusion	Inclusion	Inclusion
	<b>Care Setting/Diagnosis Position</b>	Any	Any	Any	Any
	<b>Lookback Period</b>	(-365, -1)	(-365, -1)	(-365, -1)	(-365, -1)
	<b>Number of Code Occurrences</b>	1 instance	1 instance	1 instance	1 instance
Inclusion/ Exclusion Criteria	<b>Conditions</b>	Gestational diabetes	Gestational diabetes	Gestational diabetes	Gestational diabetes
	<b>Include or Exclude</b>	Exclusion	Exclusion	Exclusion	Exclusion
	<b>Care Setting/Diagnosis Position</b>	Any	Any	Any	Any
	<b>Lookback Period</b>	(-365, 0)	(-365, 0)	(-365, 0)	(-365, 0)
	<b>Number of Code Occurrences</b>	1 instance	1 instance	1 instance	1 instance
Inclusion/ Exclusion Criteria	<b>Conditions</b>			Congestive heart failure	Congestive heart failure
	<b>Include or Exclude</b>			Exclusion	Exclusion
	<b>Care Setting/Diagnosis Position</b>			Any	Any
	<b>Lookback Period</b>			(-365, -1)	(-365, -1)
	<b>Number of Code Occurrences</b>			1 instance	1 instance

Appendix H.5. Specifications for Parameters in this Request, Comparison 8; Saxagliptin vs Sitagliptin, Comparison 9; Saxagliptin vs Pioglitazone

Stockpiling Algorithm	Same Day Dispensing (Days Supplied)	Sum	Sum	Sum	Sum
	Same Day Dispensing (Amount Supplied)	Sum	Sum	Sum	Sum
	Range of Allowable Days Supplied	Max 120 Days (inclusive)	Max 120 Days (inclusive)	Max 120 Days (inclusive)	Max 120 Days (inclusive)
	Range of Allowable Amount Supplied	N/A	N/A	N/A	N/A
	Overlap Percentage Processing	Default	Default	Default	Default
Baseline Covariates/Utilization/Comorbidity Score	Covariates	(See Covariates table)		(See Covariates table)	
	Care Setting/Diagnosis Position	inpatient (IP*), outpatient (AV* only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)		inpatient (IP*), outpatient (AV* only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)	
	Covariate Evaluation Window (days)	(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated		(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated	
	Comorbidity Score Evaluation window (days)	(-365, -1)		(-365, -1)	
	Medical Utilization Evaluation Window	(-365, -1)		(-365, -1)	
	Medical Utilization Care setting	IP, Inpatient stay (IS), AV, Other ambulatory visit (OA), Emergency department (ED)		IP, IS, AV, OA, ED	
	Drug Utilization Evaluation Window	(-365, -1)		(-365, -1)	

Appendix H.5. Specifications for Parameters in this Request, Comparison 8; Saxagliptin vs Sitagliptin, Comparison 9; Saxagliptin vs Pioglitazone

Propensity Score Analysis/Subgroup Analysis	<b>Analysis type</b>	Propensity score analysis	Propensity score analysis
	<b>Perform HDPS Analysis</b>	No	No
	<b>Matching Ratio</b>	1:1	1:1
	<b>Matching Caliper Settings</b>	0.01	0.01
	<b>Subgroup Analyses</b>	Prior cardiovascular disease (Yes, No)  Age groups (00-64, 65+ years)  Sex (Male, Female)	Prior cardiovascular disease (Yes, No)  Age groups (00-64, 65+ years)  Sex (Male, Female)
	<b>Population used for rematching within subgroups</b>	Total population	Total population

**Appendix H.6. Specifications for Parameters in this Request, Comparison 10; Saxagliptin vs Long-acting insulins, Comparison 11; Saxagliptin vs Second-generation sulfonylureas**

This request utilized the Cohort Identification and Descriptive Analysis (CIDA) module, with Propensity Score Matching (PSM) Analysis, version 7.3.4 to recreate a protocol-based assessment (PBA) of investigation on acute myocardial infarction (AMI) and hospitalized heart failure (hHF) following saxagliptin or sitagliptin use in comparison to long-acting insulin, pioglitazone, and second-generation sulfonylureas using updated data and CIDA features.

**Query Period:** See specifications for monitoring periods for each comparison  
**Coverage Requirement:** Medical and Drug Coverage  
**Pre-exposure enrollment (days):** 12 months (365 days)  
**Enrollment Gap:** 45 days  
**Sex:** Female or Male only  
**Age Groups:** 18-29, 30-44, 45-54, 55-64, 65-74, 75-84, 85+ years  
 18-64, 65+ years (PS matching only)  
**Patient-level Return:** No  
**Envelope Macro Use:** No  
**Freeze Data:** Yes

Drug/Exposure Definition

	Comparison 10		Comparison 11	
	Exposure of Interest Group	Reference Group	Exposure of Interest Group	Reference Group
<b>Monitoring Period Start</b>	8/1/2009		8/1/2009	
<b>Monitoring Period End</b>	9/30/2015		9/30/2015	
<b>Exposure</b>	Saxagliptin	Long-acting insulins	Saxagliptin	Second-generation sulfonylureas
<b>Incidence with Respect to</b>	Saxagliptin, long-acting insulins	Saxagliptin, long-acting insulins	Saxagliptin, second-generation sulfonylureas	Saxagliptin, second-generation sulfonylureas
<b>Washout (days)</b>	365 days	365 days	365 days	365 days
<b>Exposure Episode Truncation Criteria</b>	Death, Query end date, End of exposure use, Occurrence of first hHF, Use of long-acting insulins	Death, Query end date, End of exposure use, Occurrence of first hHF, Use of saxagliptin	Death, Query end date, End of exposure use, Occurrence of first hHF, Use of second-generation sulfonylureas	Death, Query end date, End of exposure use, Occurrence of first hHF, Use of saxagliptin
<b>Cohort Definition</b>	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)	Only the first valid treatment episode during the query period (01)
<b>Exposure Episode Gap</b>	33% previous days' supply	33% previous days' supply	33% previous days' supply	33% previous days' supply
<b>Exposure Extension Period</b>	12 days	12 days	12 days	12 days
<b>Minimum Episode Duration</b>	1 day	1 day	1 day	1 day
<b>Minimum Days Supplied</b>	1 day	1 day	1 day	1 day

Appendix H.6. Specifications for Parameters in this Request, Comparison 10; Saxagliptin vs Long-acting insulins, Comparison 11; Saxagliptin vs Second-generation sulfonylureas

Outcome Definition	<b>Event/Outcome</b>	hHF	hHF	hHF	hHF
	<b>Care Setting/Diagnosis Position</b>	Inpatient Primary (IPP)	IPP	IPP	IPP
	<b>Event Incidence with Respect to</b>	hHF or AMI	hHF or AMI	hHF or AMI	hHF or AMI
	<b>Event Incidence Criteria Care Setting / Diagnosis Position</b>	IPP	IPP	IPP	IPP
	<b>Event Washout (days)</b>	60 days	60 days	60 days	60 days
	<b>Blackout Period</b>	0 days	0 days	0 days	0 days
	Inclusion/ Exclusion Criteria	<b>Conditions</b>	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)
<b>Include or Exclude</b>		Inclusion	Inclusion	Inclusion	Inclusion
<b>Care Setting/Diagnosis Position</b>		Any	Any	Any	Any
<b>Lookback Period</b>		(-365, -1)	(-365, -1)	(-365, -1)	(-365, -1)
<b>Number of Code Occurrences</b>		1 instance	1 instance	1 instance	1 instance
Inclusion/ Exclusion Criteria	<b>Conditions</b>	Gestational diabetes	Gestational diabetes	Gestational diabetes	Gestational diabetes
	<b>Include or Exclude</b>	Exclusion	Exclusion	Exclusion	Exclusion
	<b>Care Setting/Diagnosis Position</b>	Any	Any	Any	Any
	<b>Lookback Period</b>	(-365, 0)	(-365, 0)	(-365, 0)	(-365, 0)
	<b>Number of Code Occurrences</b>	1 instance	1 instance	1 instance	1 instance
Inclusion/ Exclusion Criteria	<b>Conditions</b>	Short-acting insulin use only (defined as: Only one diabetes medication class (see Covariates table) AND this class is a short-acting insulin dispensing)	Short-acting insulin use only (defined as: Only one diabetes medication class (see Covariates table) AND this class is a short-acting insulin dispensing)		
	<b>Include or Exclude</b>	Exclusion	Exclusion		
	<b>Care Setting/Diagnosis Position</b>	Any	Any		
	<b>Lookback Period</b>	(-365, -1)	(-365, -1)		
	<b>Number of Code Occurrences</b>	1 instance	1 instance		

Appendix H.6. Specifications for Parameters in this Request, Comparison 10; Saxagliptin vs Long-acting insulins, Comparison 11; Saxagliptin vs Second-generation sulfonylureas

Stockpiling Algorithm	Same Day Dispensing (Days Supplied)	Sum	Sum	Sum	Sum
	Same Day Dispensing (Amount Supplied)	Sum	Sum	Sum	Sum
	Range of Allowable Days Supplied	Max 120 Days (inclusive)	Max 120 Days (inclusive)	Max 120 Days (inclusive)	Max 120 Days (inclusive)
	Range of Allowable Amount Supplied	N/A	N/A	N/A	N/A
	Overlap Percentage Processing	Default	Default	Default	Default
Baseline Covariates/Utilization/Comorbidity Score	Covariates	(See Covariates table)		(See Covariates table)	
	Care Setting/Diagnosis Position	inpatient (IP*), outpatient (AV* only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)		inpatient (IP*), outpatient (AV* only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)	
	Covariate Evaluation Window (days)	(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated		(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated	
	Comorbidity Score Evaluation window (days)	(-365, -1)		(-365, -1)	
	Medical Utilization Evaluation Window	(-365, -1)		(-365, -1)	
	Medical Utilization Care setting	IP, Inpatient stay (IS), AV, Other ambulatory visit (OA), Emergency department (ED)		IP, IS, AV, OA, ED	
	Drug Utilization Evaluation Window	(-365, -1)		(-365, -1)	

Appendix H.6. Specifications for Parameters in this Request, Comparison 10; Saxagliptin vs Long-acting insulins, Comparison 11; Saxagliptin vs Second-generation sulfonylureas

Propensity Score Analysis/Subgroup Analysis	<b>Analysis type</b>	Propensity score analysis	Propensity score analysis
	<b>Perform HDPS Analysis</b>	No	No
	<b>Matching Ratio</b>	1:1	1:1
	<b>Matching Caliper Settings</b>	0.01	0.01
	<b>Subgroup Analyses</b>	<p>Prior cardiovascular disease (Yes, No)</p> <p>Age groups (00-64, 65+ years)</p> <p>Sex (Male, Female)</p>	<p>Prior cardiovascular disease (Yes, No)</p> <p>Age groups (00-64, 65+ years)</p> <p>Sex (Male, Female)</p>
	<b>Population used for rematching within subgroups</b>	Total population	Total population



Appendix H.7. Specifications for Parameters in this Request, Comparison 12; Sitagliptin vs Pioglitazone, Comparison 13; Sitagliptin vs Long-acting insulins

Outcome Definition	<b>Event/Outcome</b>	hHF	hHF	hHF	hHF
	<b>Care Setting/Diagnosis Position</b>	Inpatient Primary (IPP)	IPP	IPP	IPP
	<b>Event Incidence with Respect to</b>	hHF or AMI	hHF or AMI	hHF or AMI	hHF or AMI
	<b>Event Incidence Criteria Care Setting / Diagnosis Position</b>	IPP	IPP	IPP	IPP
	<b>Event Washout (days)</b>	60 days	60 days	60 days	60 days
	<b>Blackout Period</b>	0 days	0 days	0 days	0 days
	Inclusion/ Exclusion Criteria	<b>Conditions</b>	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)	Diabetes (diagnosis or medication, not including short-acting insulins)
<b>Include or Exclude</b>		Inclusion	Inclusion	Inclusion	Inclusion
<b>Care Setting/Diagnosis Position</b>		Any	Any	Any	Any
<b>Lookback Period</b>		(-365, -1)	(-365, -1)	(-365, -1)	(-365, -1)
<b>Number of Code Occurrences</b>		1 instance	1 instance	1 instance	1 instance
Inclusion/ Exclusion Criteria	<b>Conditions</b>	Gestational diabetes	Gestational diabetes	Gestational diabetes	Gestational diabetes
	<b>Include or Exclude</b>	Exclusion	Exclusion	Exclusion	Exclusion
	<b>Care Setting/Diagnosis Position</b>	Any	Any	Any	Any
	<b>Lookback Period</b>	(-365, 0)	(-365, 0)	(-365, 0)	(-365, 0)
	<b>Number of Code Occurrences</b>	1 instance	1 instance	1 instance	1 instance
Inclusion/ Exclusion Criteria	<b>Conditions</b>	Congestive heart failure	Congestive heart failure	Short-acting insulin use only (defined as: Only one diabetes medication class (see Covariates table) AND this class is a short-acting insulin dispensing)	Short-acting insulin use only (defined as: Only one diabetes medication class (see Covariates table) AND this class is a short-acting insulin dispensing)
	<b>Include or Exclude</b>	Exclusion	Exclusion	Exclusion	Exclusion
	<b>Care Setting/Diagnosis Position</b>	Any	Any	Any	Any
	<b>Lookback Period</b>	(-365, -1)	(-365, -1)	(-365, -1)	(-365, -1)
	<b>Number of Code Occurrences</b>	1 instance	1 instance	1 instance	1 instance

Appendix H.7. Specifications for Parameters in this Request, Comparison 12; Sitagliptin vs Pioglitazone, Comparison 13; Sitagliptin vs Long-acting insulins

Stockpiling Algorithm	Same Day Dispensing (Days Supplied)	Sum	Sum	Sum	Sum
	Same Day Dispensing (Amount Supplied)	Sum	Sum	Sum	Sum
	Range of Allowable Days Supplied	Max 120 Days (inclusive)	Max 120 Days (inclusive)	Max 120 Days (inclusive)	Max 120 Days (inclusive)
	Range of Allowable Amount Supplied	N/A	N/A	N/A	N/A
	Overlap Percentage Processing	Default	Default	Default	Default
Baseline Covariates/Utilization/Comorbidity Score	Covariates	(See Covariates table)		(See Covariates table)	
	Care Setting/Diagnosis Position	inpatient (IP*), outpatient (AV* only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)		inpatient (IP*), outpatient (AV* only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)	
	Covariate Evaluation Window (days)	(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated		(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated	
	Comorbidity Score Evaluation window (days)	(-365, -1)		(-365, -1)	
	Medical Utilization Evaluation Window	(-365, -1)		(-365, -1)	
	Medical Utilization Care setting	IP, Inpatient stay (IS), AV, Other ambulatory visit (OA), Emergency department (ED)		IP, IS, AV, OA, ED	
	Drug Utilization Evaluation Window	(-365, -1)		(-365, -1)	

Appendix H.7. Specifications for Parameters in this Request, Comparison 12; Sitagliptin vs Pioglitazone, Comparison 13; Sitagliptin vs Long-acting insulins

Propensity Score Analysis/Subgroup Analysis	<b>Analysis type</b>	Propensity score analysis	Propensity score analysis
	<b>Perform HDPS Analysis</b>	No	No
	<b>Matching Ratio</b>	1:1	1:1
	<b>Matching Caliper Settings</b>	0.01	0.01
	<b>Subgroup Analyses</b>	<p>Prior cardiovascular disease (Yes, No)</p> <p>Age groups (00-64, 65+ years)</p> <p>Sex (Male, Female)</p>	<p>Prior cardiovascular disease (Yes, No)</p> <p>Age groups (00-64, 65+ years)</p> <p>Sex (Male, Female)</p>
	<b>Population used for rematching within subgroups</b>	Total population	Total population

**Appendix H.8. Specifications for Parameters in this Request, Comparison 14; Sitagliptin vs Second-generation sulfonylureas**

This request utilized the Cohort Identification and Descriptive Analysis (CIDA) module, with Propensity Score Matching (PSM) Analysis, version 7.3.4 to recreate a protocol-based assessment (PBA) of investigation on acute myocardial infarction (AMI) and hospitalized heart failure (hHF) following saxagliptin or sitagliptin use in comparison to long-acting insulin, pioglitazone, and second-generation sulfonylureas using updated data and CIDA features.

**Query Period:** See specifications for monitoring periods for each comparison  
 Best analysis will be distributed to all DPs except MCRF

**Coverage Requirement:** Medical and Drug Coverage

**Pre-exposure enrollment (days):** 12 months (365 days)

**Enrollment Gap:** 45 days

**Sex:** Female or Male only

**Age Groups:** 18-29, 30-44, 45-54, 55-64, 65-74, 75-84, 85+ years  
 18-64, 65+ years (PS matching only)

**Patient-level Return:** No

**Envelope Macro Use:** No

**Freeze Data:** Yes

Drug/Exposure Definition

	<b>Comparison 14</b>	
	<b>Exposure of Interest Group</b>	<b>Reference Group</b>
<b>Monitoring Period Start</b>	10/1/2006	
<b>Monitoring Period End</b>	9/30/2015	
<b>Exposure</b>	Sitagliptin	Second-generation sulfonylureas
<b>Incidence with Respect to</b>	Sitagliptin, second-generation sulfonylureas	Sitagliptin, second-generation sulfonylureas
<b>Washout (days)</b>	365	365
<b>Exposure Episode Truncation Criteria</b>	Death, Query end date, End of exposure use, Occurrence of first hHF, Use of second-generation sulfonylureas	Death, Query end date, End of exposure use, Occurrence of first hHF, Use of sitagliptin
<b>Cohort Definition</b>	Only the first valid treatment episode during the query period (01)	
<b>Exposure Episode Gap</b>	33% previous days' supply	
<b>Exposure Extension Period</b>	12 days	12 days
<b>Minimum Episode Duration</b>	1 day	1 day
<b>Minimum Days Supplied</b>	1 day	1 day

Appendix H.8. Specifications for Parameters in this Request, Comparison 14; Sitagliptin vs Second-generation sulfonylureas

Outcome Definition	<b>Event/Outcome</b>	hHF	hHF
	<b>Care Setting/Diagnosis Position</b>	Inpatient Primary (IPP)	IPP
	<b>Event Incidence with Respect to</b>	hHF or AMI	hHF or AMI
	<b>Event Incidence Criteria Care Setting / Diagnosis Position</b>	IPP	IPP
	<b>Event Washout (days)</b>	60	60
	<b>Blackout Period</b>	0 days	0 days
	Inclusion/ Exclusion Criteria	<b>Conditions</b>	Diabetes (diagnosis or medication, not including short-acting insulins)
<b>Include or Exclude</b>		Inclusion	Inclusion
<b>Care Setting/Diagnosis Position</b>		Any	Any
<b>Lookback Period</b>		(-365, -1)	(-365, -1)
<b>Number of Code Occurrences</b>		1 instance	1 instance
Inclusion/ Exclusion Criteria	<b>Conditions</b>	Gestational diabetes	Gestational diabetes
	<b>Include or Exclude</b>	Exclusion	Exclusion
	<b>Care Setting/Diagnosis Position</b>	Any	Any
	<b>Lookback Period</b>	(-365, 0)	(-365, 0)
	<b>Number of Code Occurrences</b>	1 instance	1 instance
Inclusion/ Exclusion Criteria	<b>Conditions</b>		
	<b>Include or Exclude</b>		
	<b>Care Setting/Diagnosis Position</b>		
	<b>Lookback Period</b>		
	<b>Number of Code Occurrences</b>		

Appendix H.8. Specifications for Parameters in this Request, Comparison 14; Sitagliptin vs Second-generation sulfonylureas

Stockpiling Algorithm	Same Day Dispensing (Days Supplied)	Sum	Sum
	Same Day Dispensing (Amount Supplied)	Sum	Sum
	Range of Allowable Days Supplied	Max 120 Days (inclusive)	Max 120 Days (inclusive)
	Range of Allowable Amount Supplied	N/A	N/A
	Overlap Percentage Processing	Default	Default
Baseline Covariates/Utilization/Comorbidity Score	Covariates	(See Covariates table)	
	Care Setting/Diagnosis Position	inpatient (IP*), outpatient (AV* only) (Stroke (narrow), AMI (narrow), and hHF must have Diagnosis Position of Primary)	
	Covariate Evaluation Window (days)	(-365, -1) for Baseline or (0, 0) for Concurrent unless otherwise stated	
	Comorbidity Score Evaluation window (days)	(-365, -1)	
	Medical Utilization Evaluation Window	(-365, -1)	
	Medical Utilization Care setting	IP, Inpatient stay (IS), AV, Other ambulatory visit (OA), Emergency department (ED)	
	Drug Utilization Evaluation Window	(-365, -1)	

Appendix H.8. Specifications for Parameters in this Request, Comparison 14; Sitagliptin vs Second-generation sulfonylureas

Propensity Score Analysis/Subgroup Analysis	<b>Analysis type</b>	Propensity score analysis
	<b>Perform HDPS Analysis</b>	No
	<b>Matching Ratio</b>	1:1
	<b>Matching Caliper Settings</b>	0.01
	<b>Subgroup Analyses</b>	<p>Prior cardiovascular disease (Yes, No)</p> <p>Age groups (00-64, 65+ years)</p> <p>Sex (Male, Female)</p>
<b>Population used for rematching within subgroups</b>	Total population	

**Appendix I. List and Definition of Covariates Appearing in Table 1, Propensity Score Model (PSM), or Subgroup Definition in All Comparisons, All Analyses and Outcomes**

Group	Covariate	Code Type	Care Setting	Form	Time (days)	Analysis
Prior Cardiovascular Disease	Prior acute myocardial infarction (AMI) (broad)	Diagnosis (Dx), Procedure (Px)	Inpatient (IP*), Ambulatory visit (AV*)	Categorical	(-365, -61)	No PS model
Prior Cardiovascular Disease	Prior acute myocardial infarction (AMI) (narrow)	Dx, Px	Inpatient primary (IPP)	Categorical	(-365, -61)	PS model
Prior Cardiovascular Disease	All prior acute myocardial infarction (AMI) (broad)	Dx, Px	IP*, AV*	Categorical	(-365, -1)	No PS model
Prior Cardiovascular Disease	Prior hospitalized heart failure (hHF)	Dx, Px	IPP	Categorical	(-365, -61)	hHF outcome only
Prior Cardiovascular Disease	Other ischemic heart disease	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Prior Cardiovascular Disease	Heart failure	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Prior Cardiovascular Disease	Other heart disease	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Prior Cardiovascular Disease	Stroke (broad)	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Prior Cardiovascular Disease	Stroke (narrow)	Dx, Px	IPP	Categorical	(-365, -1)	PS model
Prior Cardiovascular Disease	Peripheral arterial disease	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Prior Cardiovascular Disease	All coronary revascularization procedures (see below)	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Prior Cardiovascular Disease	Coronary artery bypass graft	Dx, Px	IP*, AV*	Categorical	(-365, -1)	No PS model
Prior Cardiovascular Disease	Percutaneous coronary intervention	Dx, Px	IP*, AV*	Categorical	(-365, -1)	No PS model
Prior Cardiovascular Disease	All carotid revascularization procedures (see below)	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Prior Cardiovascular Disease	Carotid endarterectomy, stenting, angioplasty, or atherectomy	Dx, Px	IP*, AV*	Categorical	(-365, -1)	No PS model
Prior Cardiovascular Disease	Carotid bypass	Dx, Px	IP*, AV*	Categorical	(-365, -1)	No PS model
Prior Cardiovascular Disease	All lower extremity revascularization (see below)	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Prior Cardiovascular Disease	Lower extremity endarterectomy, stenting, angioplasty, or atherectomy	Dx, Px	IP*, AV*	Categorical	(-365, -1)	No PS model
Prior Cardiovascular Disease	Lower extremity bypass	Dx, Px	IP*, AV*	Categorical	(-365, -1)	No PS model
Prior Cardiovascular Disease	Lower extremity amputation	Dx, Px	IP*, AV*	Categorical	(-365, -1)	No PS model
Prior Cardiovascular Disease	All prior cardiovascular disease covariates	Dx, Px	IP*, AV*	Categorical	(-365, -1)	Subgroup definition
Comorbidities	Asthma	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	Cancer (excluding non-melanoma skin cancer)	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	Chronic kidney disease (excluding ESRD)	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	Chronic obstructive pulmonary disease	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	Dementia	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	Depression	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	End stage renal disease (ESRD)	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model

**Appendix I. List and Definition of Covariates Appearing in Table 1, Propensity Score Model (PSM), or Subgroup Definition in All Comparisons, All Analyses and Outcomes**

Group	Covariate	Code Type	Care Setting	Form	Time (days)	Analysis
Comorbidities	Fracture	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	HIV/AIDS	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	Hyperlipidemia or lipid disorder	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	Hypertension	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	Hypoglycemia	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	Obesity (or weight gain)	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	Osteoporosis	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	Peripheral neuropathy	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	Tobacco use	Dx, Px	IP*, AV*	Categorical	(-365, -1)	PS model
Comorbidities	All comorbidity covariates	Dx, Px	IP*, AV*	Categorical	(-365, -1)	No PS model
Anti-Diabetics	Alpha-glucosidase inhibitors	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	Biguanides	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	Other dipeptidyl peptidase 4 (DPP-4) inhibitors	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	Glucagon-like peptide-1 (GLP-1) analogues	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	Meglitinides	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	Saxagliptin*	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	Sitagliptin*	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	Pioglitazone*	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	First-generation sulfonylureas	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	Second-generation sulfonylureas*	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	Long-acting insulins*	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	Short-acting insulins	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	Other thiazolidinediones	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	Sodium-glucose cotransporter-2 (SGLT-2) inhibitors	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	Amylin analog-types	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics	All anti-diabetics	Rx	N/A	Categorical	(-365, -1)	No PS model
Anti-Hypertensive Agents	Angiotensin-converting enzyme (ACE) inhibitors	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Hypertensive Agents	Alpha blockers	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Hypertensive Agents	Angiotensin receptor blockers	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Hypertensive Agents	Beta blockers	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Hypertensive Agents	Calcium channel blockers	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Hypertensive Agents	Direct vasodilators	Rx	N/A	Categorical	(-365, -1)	PS model

**Appendix I. List and Definition of Covariates Appearing in Table 1, Propensity Score Model (PSM), or Subgroup Definition in All Comparisons, All Analyses and Outcomes**

Group	Covariate	Code Type	Care Setting	Form	Time (days)	Analysis
Anti-Hypertensive Agents	Loop diuretics	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Hypertensive Agents	Aldosterone receptor agonists (ARAs)	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Hypertensive Agents	Non-ARA potassium sparing diuretics	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Hypertensive Agents	Thiazide diuretics	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Hypertensive Agents	Renin inhibitors	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Hypertensive Agents	Central alpha-2 receptor agonists (clonidine, all combinations)	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Hypertensive Agents	All anti-hypertensive agents	Rx	N/A	Categorical	(-365, -1)	No PS model
Lipid-Lowering Agents	Lipid-lowering agents	Rx	N/A	Categorical	(-365, -1)	PS model
Anti-Diabetics Concurrent	Alpha-glucosidase inhibitors	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	Biguanides	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	Other DPP-4 inhibitors	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	GLP-1 analogues	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	Meglitinides	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	Saxagliptin*	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	Sitagliptin*	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	Pioglitazone*	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	First-generation sulfonylureas	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	Second-generation sulfonylureas*	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	Long-acting insulins*	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	Short-acting insulins	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	Other thiazolidinediones	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	SGLT-2 inhibitors	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetics Concurrent	Amylin analog-types	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Diabetes Concurrent	All anti-diabetics	Rx	N/A	Categorical	(0, 0)	No PS model
Anti-Hypertensive Agents Concurrent	Angiotensin-converting enzyme inhibitors	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Hypertensive Agents Concurrent	Alpha blockers	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Hypertensive Agents Concurrent	Angiotensin receptor blockers	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Hypertensive Agents Concurrent	Beta blockers	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Hypertensive Agents Concurrent	Calcium channel blockers	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Hypertensive Agents Concurrent	Direct vasodilators	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Hypertensive Agents Concurrent	Loop diuretics	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Hypertensive Agents Concurrent	Aldosterone receptor agonists (ARAs)	Rx	N/A	Categorical	(0, 0)	PS model

**Appendix I. List and Definition of Covariates Appearing in Table 1, Propensity Score Model (PSM), or Subgroup Definition in All Comparisons, All Analyses and Outcomes**

Group	Covariate	Code Type	Care Setting	Form	Time (days)	Analysis
Anti-Hypertensive Agents Concurrent	Non-ARA potassium sparing diuretics	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Hypertensive Agents Concurrent	Thiazide diuretics	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Hypertensive Agents Concurrent	Renin inhibitors	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Hypertensive Agents Concurrent	Central alpha-2 receptor agonists (clonidine, all combinations)	Rx	N/A	Categorical	(0, 0)	PS model
Anti-Hypertensive Agents Concurrent	All anti-hypertensive agents	Rx	N/A	Categorical	(0, 0)	No PS model
Lipid-Lowering Agents Concurrent	Lipid-lowering agents	Rx	N/A	Categorical	(0, 0)	PS model
Demographics	Age	N/A	N/A	Continuous	N/A	PS model
Demographics	Sex	N/A	N/A	Categorical	N/A	PS model
Demographics	Calendar year	N/A	N/A	Categorical	N/A	PS model
Demographics	Race/ethnicity	N/A	N/A	Categorical	N/A	PS model
Utilization	Non-acute institutional stay (IS visit) during prior year	N/A	N/A	Categorical	(-365, -1)	PS model
Utilization	Any hospitalization (IP visit) within prior 30 days	N/A	N/A	Categorical	(-30, -1)	PS model
Utilization	Any hospitalization (IP visit) 31-365 days	N/A	N/A	Categorical	(-365, -31)	PS model
Utilization	Any ED visit within prior 30 days	N/A	N/A	Categorical	(-30, -1)	PS model
Utilization	Any ED visit 31-365 days before	N/A	N/A	Categorical	(-365, -31)	PS model
Utilization	Number of outpatient (AV) visits in prior year	N/A	N/A	Continuous	(-365, -1)	PS model
Utilization	Number of unique medications dispensed in prior year	N/A	N/A	Continuous	(-365, -1)	PS model

All covariates listed will appear in Table 1 output

The notes below applies to both baseline and concurrent covariates.

Red indicates these covariates were grouped into aggregate "other" group for respective group for propensity score (PS) model.

- Other anti-diabetics (Replication): Alpha glucosidase inhibitors, DPP-4, meglitinides, first-generation sulfonylureas, saxagliptin, other anti-diabetics (Canagliflozin, GLP-1 analogues, amylin analog-type).

Note that saxagliptin is not included in this aggregate covariate for analyses where saxagliptin is the exposure of interest.

- Other anti-hypertensives: Central alpha-2 receptor agonists, alpha blockers, aldosterone receptor antagonists, potassium sparing diuretics, loop diuretics, direct vasodilators, renin inhibitors, reserpine and derivatives

Final anti-diabetic covariates to be used in "Replication" PS model : Biguanides, short-acting insulins, thiazolidinediones, exposure anti-diabetics\*, other anti-diabetics (as defined in the row above)

Final anti-hypertensive covariates to be used in both PS model: ACE-inhibitors, angiotensin receptor blockers, beta blockers, calcium channel blockers, thiazide diuretics, other anti-hypertensives (as defined in the row above)

\*Treatment drugs are only included in PS model if **not** part of treatment-comparator pair. For example, saxagliptin-insulin would have sitagliptin, pioglitazone, and sulfonylureas, but not long-acting insulins, within PS model.