

## Disclaimer

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

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

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

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

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

**Date Run:** October 25, 2017

**Request Description:** The purpose of this report was to compare the frequency of diagnoses for ischemic stroke using International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) versus International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) diagnosis codes. ICD-10-CM code definitions were determined by mapping from ICD-9-CM code definitions using the Centers for Medicare and Medicaid Services (CMS) General Equivalence Mappings (GEMs). Forward-backward mapping (FBM) was used to map ICD-9-CM to ICD-10-CM codes.<sup>1</sup>

**Sentinel Modular Program Tool Used:** Cohort Identification and Descriptive Analysis (CIDA) tool, version 5.0.5

**Data Source:** This request was run against data from 12 Data Partners contributing to the Sentinel Distributed Database (SDD). Data from October 1, 2010 to September 30, 2016 were included in this report. The report includes three separate time periods: 1) October 1, 2010 to September 30, 2016; 2) April 1, 2015 to September 30, 2015; and 3) April 1, 2016 to September 30, 2016. This request was distributed to Data Partners on October 25, 2017. See Appendix A for a list of dates of available data for each Data Partner.

**Study Design:** We examined the incidence and prevalence across the ICD-9-CM era (October 2010 - September 2015) and ICD-10-CM era (October 2015 - September 2016) in the United States. Incidence was additionally evaluated from April 2015 to September 2015 and April 2016 to September 2016. See Appendix B for specific codes used to define ischemic stroke in this request.

**Cohort Eligibility Criteria:** Members included in the cohort were required to be continuously enrolled in health plans with medical and drug coverage for at least six months (183 days) before their diagnosis date, during which gaps in coverage of up to 45 days were allowed. The following age groups were included in the cohort: 21-64, 65-74, 75-84, and 85-99 years.

**Incident Cohorts:** Members included in the incident cohorts were required to be continuously enrolled in health plans with medical and drug coverage for at least 183 days prior to ischemic stroke diagnosis, during which gaps in coverage of up to 45 days were allowed. Incident ischemic stroke was defined as no previous ischemic stroke diagnosis in the 183 days preceding the index date with respect to ICD-9-CM and ICD-10-CM codes.

**Prevalent Cohorts:** There was no enrollment time requirement for members in the prevalent cohorts. All qualifying diagnosis codes that occurred between October 1, 2010 and September 30, 2016 were included.

**Please see Appendix C for detailed specifications of parameters used in the analyses for this request.**

**Limitations:** Algorithms used to define outcomes are imperfect; thus, it is possible that there may be misclassification. Therefore, data should be interpreted with this limitation in mind.

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

<sup>1</sup>Fung, K. W., et al. (2016). "Preparing for the ICD-10-CM Transition: Automated Methods for Translating ICD Codes in Clinical Phenotype Definitions." EGEMS (Wash DC) 4(1): 1211.

## Table of Contents

<b><u>Glossary</u></b>	List of Terms Found in this Report and their Definitions
<b><u>Table 1</u></b>	Comparison of Incident Ischemic Stroke Diagnoses in the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Eras (April 1, 2015 - September 30, 2015 and April 1, 2016 - September 30, 2016)
<b><u>Figure 1</u></b>	Incidence of Ischemic Stroke Diagnoses, per 1,000 Eligible Members from October 2010 - September 2016 by Code Type, 183-Day Washout
<b><u>Figure 2</u></b>	Prevalence of Ischemic Stroke Diagnoses per 1,000 Eligible Members from October 2010 - September 2016 by Code Type, 0-Day Washout
<b><u>Appendix A</u></b>	Dates of Available Data for Each Data Partner as of Request Distribution Date (October 25, 2017)
<b><u>Appendix B</u></b>	List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Ischemic Stroke
<b><u>Appendix C</u></b>	Specifications for Parameters for this Request

**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, 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.

**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 MP algorithm: 0: Counts all occurrences of an 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 days are added after any episode gaps have been bridged

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

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

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

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

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

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

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

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

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

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

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

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

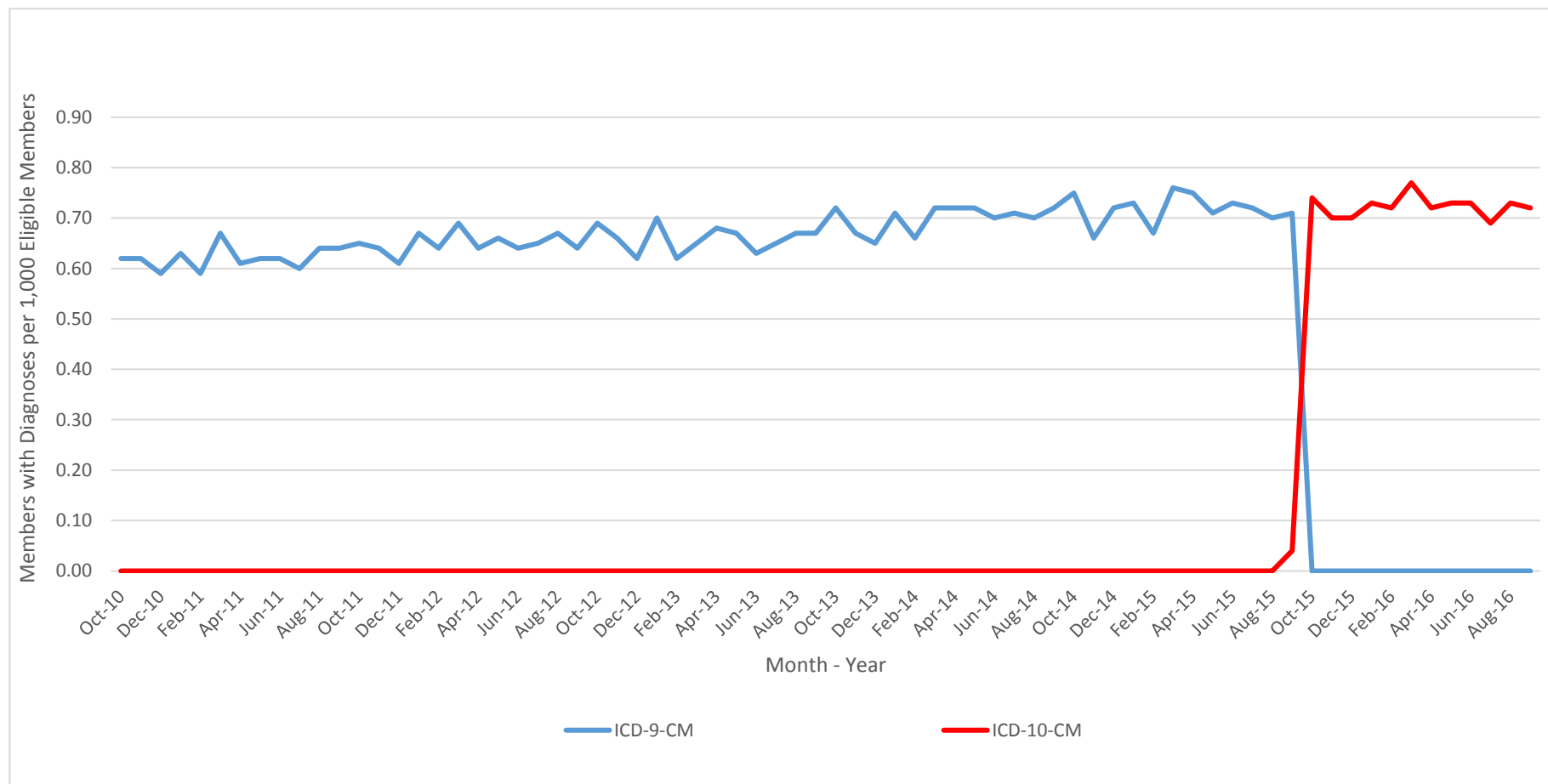
\*all terms may not be used in this report

**Table 1. Comparison of Incident\* Ischemic Stroke Diagnoses in the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Eras (April 1, 2015 - September 30, 2015 and April 1, 2016 - September 30, 2016)**

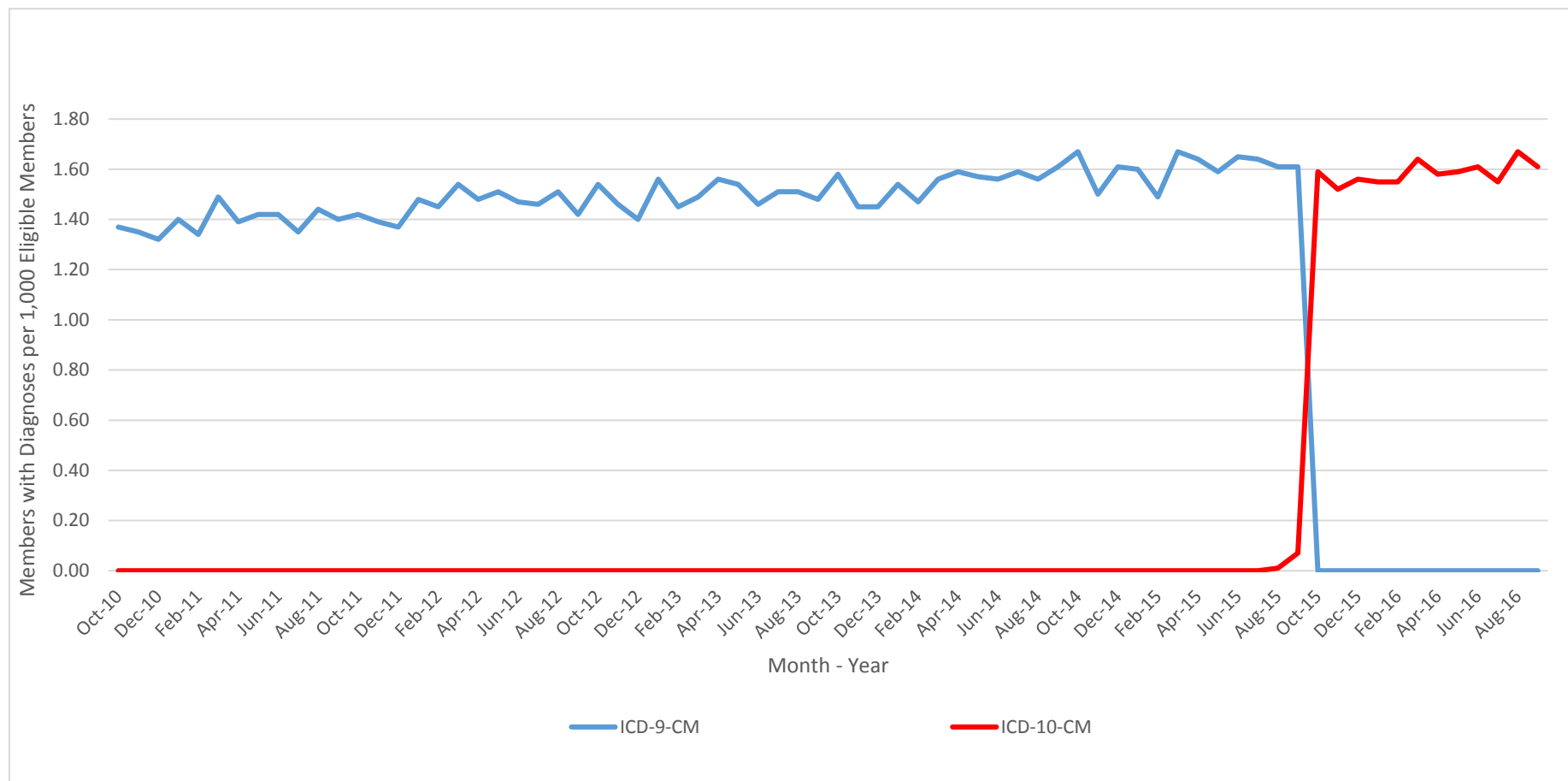
	Members with Diagnosis	Eligible Members	Members with Diagnosis per 1,000 Eligible Members
<b>Ischemic Stroke</b>			
<b>ICD-9-CM: April 1, 2015 - September 30, 2015</b>	121,737	32,323,725	3.77
<b>ICD-10-CM: April 1, 2016 - September 30, 2016</b>	124,162	33,698,555	3.68

\*Incidence defined by a 183 day washout

**Figure 1. Incidence of Ischemic Stroke Diagnoses per 1,000 Eligible Members from October 2010 - September 2016 by Code Type, 183-Day Washout**



**Figure 2. Prevalence of Ischemic Stroke Diagnoses per 1,000 Eligible Members from October 2010 - September 2016 by Code Type, 0-Day Washout**





**Appendix A. Dates of Available Data for Each Data Partner as of Request Distribution Date (October 25, 2017)**

---

<b>DP ID</b>	<b>Start Date<sup>1</sup></b>	<b>End Date<sup>1</sup></b>
DP0001	10/1/2010	6/30/2016
DP0002	10/1/2010	6/30/2016
DP0003	10/1/2010	9/30/2016
DP0004	10/1/2010	9/30/2016
DP0005	10/1/2010	9/30/2016
DP0006	10/1/2010	9/30/2016
DP0007	10/1/2010	9/30/2016
DP0008	10/1/2010	9/30/2016
DP0009	10/1/2010	9/30/2016
DP0010	10/1/2010	9/30/2016
DP0011	10/1/2010	9/30/2016
DP0012	10/1/2010	9/30/2016

<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 International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Ischemic Stroke**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>
<b>ICD-9-CM</b>		
433.01	Occlusion and stenosis of basilar artery with cerebral infarction	ICD-9-CM
433.11	Occlusion and stenosis of carotid artery with cerebral infarction	ICD-9-CM
433.21	Occlusion and stenosis of vertebral artery with cerebral infarction	ICD-9-CM
433.31	Occlusion and stenosis of multiple and bilateral precerebral arteries with cerebral infarction	ICD-9-CM
433.81	Occlusion and stenosis of other specified precerebral artery with cerebral infarction	ICD-9-CM
433.91	Occlusion and stenosis of unspecified precerebral artery with cerebral infarction	ICD-9-CM
434.01	Cerebral thrombosis with cerebral infarction	ICD-9-CM
434.11	Cerebral embolism with cerebral infarction	ICD-9-CM
434.91	Unspecified cerebral artery occlusion with cerebral infarction	ICD-9-CM
436	Acute, but ill-defined, cerebrovascular disease	ICD-9-CM
<b>ICD-10-CM</b>		
I63.22	Cerebral infarction due to unspecified occlusion or stenosis of basilar arteries	ICD-10-CM
I63.139	Cerebral infarction due to embolism of unspecified carotid artery	ICD-10-CM
I63.239	Cerebral infarction due to unspecified occlusion or stenosis of unspecified carotid arteries	ICD-10-CM
I63.019	Cerebral infarction due to thrombosis of unspecified vertebral artery	ICD-10-CM
I63.119	Cerebral infarction due to embolism of unspecified vertebral artery	ICD-10-CM
I63.219	Cerebral infarction due to unspecified occlusion or stenosis of unspecified vertebral arteries	ICD-10-CM
I63.59	Cerebral infarction due to unspecified occlusion or stenosis of other cerebral artery	ICD-10-CM
I63.20	Cerebral infarction due to unspecified occlusion or stenosis of unspecified precerebral arteries	ICD-10-CM
I63.30	Cerebral infarction due to thrombosis of unspecified cerebral artery	ICD-10-CM
I63.40	Cerebral infarction due to embolism of unspecified cerebral artery	ICD-10-CM
I63.50	Cerebral infarction due to unspecified occlusion or stenosis of unspecified cerebral artery	ICD-10-CM
I67.89	Other cerebrovascular disease	ICD-10-CM
I63.00	Cerebral infarction due to thrombosis of unspecified precerebral artery	ICD-10-CM
I63.011	Cerebral infarction due to thrombosis of right vertebral artery	ICD-10-CM
I63.012	Cerebral infarction due to thrombosis of left vertebral artery	ICD-10-CM
I63.013	Cerebral infarction due to thrombosis of bilateral vertebral arteries	ICD-10-CM
I63.02	Cerebral infarction due to thrombosis of basilar artery	ICD-10-CM
I63.031	Cerebral infarction due to thrombosis of right carotid artery	ICD-10-CM
I63.032	Cerebral infarction due to thrombosis of left carotid artery	ICD-10-CM
I63.033	Cerebral infarction due to thrombosis of bilateral carotid arteries	ICD-10-CM
I63.039	Cerebral infarction due to thrombosis of unspecified carotid artery	ICD-10-CM
I63.09	Cerebral infarction due to thrombosis of other precerebral artery	ICD-10-CM
I63.10	Cerebral infarction due to embolism of unspecified precerebral artery	ICD-10-CM
I63.111	Cerebral infarction due to embolism of right vertebral artery	ICD-10-CM

**Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Ischemic Stroke**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>
I63.112	Cerebral infarction due to embolism of left vertebral artery	ICD-10-CM
I63.113	Cerebral infarction due to embolism of bilateral vertebral arteries	ICD-10-CM
I63.12	Cerebral infarction due to embolism of basilar artery	ICD-10-CM
I63.131	Cerebral infarction due to embolism of right carotid artery	ICD-10-CM
I63.132	Cerebral infarction due to embolism of left carotid artery	ICD-10-CM
I63.133	Cerebral infarction due to embolism of bilateral carotid arteries	ICD-10-CM
I63.19	Cerebral infarction due to embolism of other precerebral artery	ICD-10-CM
I63.211	Cerebral infarction due to unspecified occlusion or stenosis of right vertebral arteries	ICD-10-CM
I63.212	Cerebral infarction due to unspecified occlusion or stenosis of left vertebral arteries	ICD-10-CM
I63.213	Cerebral infarction due to unspecified occlusion or stenosis of bilateral vertebral arteries	ICD-10-CM
I63.231	Cerebral infarction due to unspecified occlusion or stenosis of right carotid arteries	ICD-10-CM
I63.232	Cerebral infarction due to unspecified occlusion or stenosis of left carotid arteries	ICD-10-CM
I63.233	Cerebral infarction due to unspecified occlusion or stenosis of bilateral carotid arteries	ICD-10-CM
I63.29	Cerebral infarction due to unspecified occlusion or stenosis of other precerebral arteries	ICD-10-CM
I63.311	Cerebral infarction due to thrombosis of right middle cerebral artery	ICD-10-CM
I63.312	Cerebral infarction due to thrombosis of left middle cerebral artery	ICD-10-CM
I63.313	Cerebral infarction due to thrombosis of bilateral middle cerebral arteries	ICD-10-CM
I63.319	Cerebral infarction due to thrombosis of unspecified middle cerebral artery	ICD-10-CM
I63.321	Cerebral infarction due to thrombosis of right anterior cerebral artery	ICD-10-CM
I63.322	Cerebral infarction due to thrombosis of left anterior cerebral artery	ICD-10-CM
I63.323	Cerebral infarction due to thrombosis of bilateral anterior arteries	ICD-10-CM
I63.329	Cerebral infarction due to thrombosis of unspecified anterior cerebral artery	ICD-10-CM
I63.331	Cerebral infarction due to thrombosis of right posterior cerebral artery	ICD-10-CM
I63.332	Cerebral infarction due to thrombosis of left posterior cerebral artery	ICD-10-CM
I63.333	Cerebral infarction to thrombosis of bilateral posterior arteries	ICD-10-CM
I63.339	Cerebral infarction due to thrombosis of unspecified posterior cerebral artery	ICD-10-CM
I63.341	Cerebral infarction due to thrombosis of right cerebellar artery	ICD-10-CM
I63.342	Cerebral infarction due to thrombosis of left cerebellar artery	ICD-10-CM
I63.343	Cerebral infarction to thrombosis of bilateral cerebellar arteries	ICD-10-CM
I63.349	Cerebral infarction due to thrombosis of unspecified cerebellar artery	ICD-10-CM
I63.39	Cerebral infarction due to thrombosis of other cerebral artery	ICD-10-CM
I63.411	Cerebral infarction due to embolism of right middle cerebral artery	ICD-10-CM
I63.412	Cerebral infarction due to embolism of left middle cerebral artery	ICD-10-CM
I63.413	Cerebral infarction due to embolism of bilateral middle cerebral arteries	ICD-10-CM
I63.419	Cerebral infarction due to embolism of unspecified middle cerebral artery	ICD-10-CM
I63.421	Cerebral infarction due to embolism of right anterior cerebral artery	ICD-10-CM
I63.422	Cerebral infarction due to embolism of left anterior cerebral artery	ICD-10-CM
I63.423	Cerebral infarction due to embolism of bilateral anterior cerebral arteries	ICD-10-CM

**Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Ischemic Stroke**

<b>Code</b>	<b>Description</b>	<b>Code Type</b>
I63.429	Cerebral infarction due to embolism of unspecified anterior cerebral artery	ICD-10-CM
I63.431	Cerebral infarction due to embolism of right posterior cerebral artery	ICD-10-CM
I63.432	Cerebral infarction due to embolism of left posterior cerebral artery	ICD-10-CM
I63.433	Cerebral infarction due to embolism of bilateral posterior cerebral arteries	ICD-10-CM
I63.439	Cerebral infarction due to embolism of unspecified posterior cerebral artery	ICD-10-CM
I63.441	Cerebral infarction due to embolism of right cerebellar artery	ICD-10-CM
I63.442	Cerebral infarction due to embolism of left cerebellar artery	ICD-10-CM
I63.443	Cerebral infarction due to embolism of bilateral cerebellar arteries	ICD-10-CM
I63.449	Cerebral infarction due to embolism of unspecified cerebellar artery	ICD-10-CM
I63.49	Cerebral infarction due to embolism of other cerebral artery	ICD-10-CM
I63.511	Cerebral infarction due to unspecified occlusion or stenosis of right middle cerebral artery	ICD-10-CM
I63.512	Cerebral infarction due to unspecified occlusion or stenosis of left middle cerebral artery	ICD-10-CM
I63.513	Cerebral infarction due to unspecified occlusion or stenosis of bilateral middle arteries	ICD-10-CM
I63.519	Cerebral infarction due to unspecified occlusion or stenosis of unspecified middle cerebral artery	ICD-10-CM
I63.521	Cerebral infarction due to unspecified occlusion or stenosis of right anterior cerebral artery	ICD-10-CM
I63.522	Cerebral infarction due to unspecified occlusion or stenosis of left anterior cerebral artery	ICD-10-CM
I63.523	Cerebral infarction due to unspecified occlusion or stenosis of bilateral anterior arteries	ICD-10-CM
I63.529	Cerebral infarction due to unspecified occlusion or stenosis of unspecified anterior cerebral artery	ICD-10-CM
I63.531	Cerebral infarction due to unspecified occlusion or stenosis of right posterior cerebral artery	ICD-10-CM
I63.532	Cerebral infarction due to unspecified occlusion or stenosis of left posterior cerebral artery	ICD-10-CM
I63.533	Cerebral infarction due to unspecified occlusion or stenosis of bilateral posterior arteries	ICD-10-CM
I63.539	Cerebral infarction due to unspecified occlusion or stenosis of unspecified posterior cerebral artery	ICD-10-CM
I63.541	Cerebral infarction due to unspecified occlusion or stenosis of right cerebellar artery	ICD-10-CM
I63.542	Cerebral infarction due to unspecified occlusion or stenosis of left cerebellar artery	ICD-10-CM
I63.543	Cerebral infarction due to unspecified occlusion or stenosis of bilateral cerebellar arteries	ICD-10-CM
I63.549	Cerebral infarction due to unspecified occlusion or stenosis of unspecified cerebellar artery	ICD-10-CM
I63.6	Cerebral infarction due to cerebral venous thrombosis, nonpyogenic	ICD-10-CM
I63.8	Other cerebral infarction	ICD-10-CM
I63.9	Cerebral infarction, unspecified	ICD-10-CM

**Appendix C. Specifications for Parameters for this Request**

Sentinel's Cohort Identification and Descriptive Analysis (CIDA) tool version 5.0.5 was used to compare the frequency of diagnoses for ischemic stroke using International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) codes.

**Enrollment Gap:** 45 days

**Age Groups:** 21-64, 65-74, 75-84, 85-99 years

**Enrollment Requirement:** 183 days for incidence scenarios; 0 days for prevalence scenarios

**Coverage Requirement:** Medical and drug coverage

Scenario	Query Start Date	Query End Date	Event					Cohort Definition	Care Setting
			Event	Event Code Type	Incident with Respect To:	Washout (days)			
1	4/1/2015	9/30/2015	Ischemic Stroke	ICD-9-CM	ICD-9-CM	183	First valid event only	Any	
2	4/1/2016	9/30/2016	Ischemic Stroke	ICD-10-CM	ICD-10-CM	183	First valid event only	Any	
3	10/1/2010	9/30/2016	Ischemic Stroke	ICD-9-CM	ICD-9-CM or ICD-10-CM	183	Any valid events	Any	
4	10/1/2010	9/30/2016	Ischemic Stroke	ICD-10-CM	ICD-9-CM or ICD-10-CM	183	Any valid events	Any	
5	10/1/2010	9/30/2016	Ischemic Stroke	ICD-9-CM	N/A	0	Any valid events	Any	
6	10/1/2010	9/30/2016	Ischemic Stroke	ICD-10-CM	N/A	0	Any valid events	Any	

ICD-9-CM and ICD-10-CM are provided by Optum360. ICD-10-CM codes were mapped from ICD-9-CM codes using the Centers for Medicare and Medicaid Services General Equivalence Mappings.