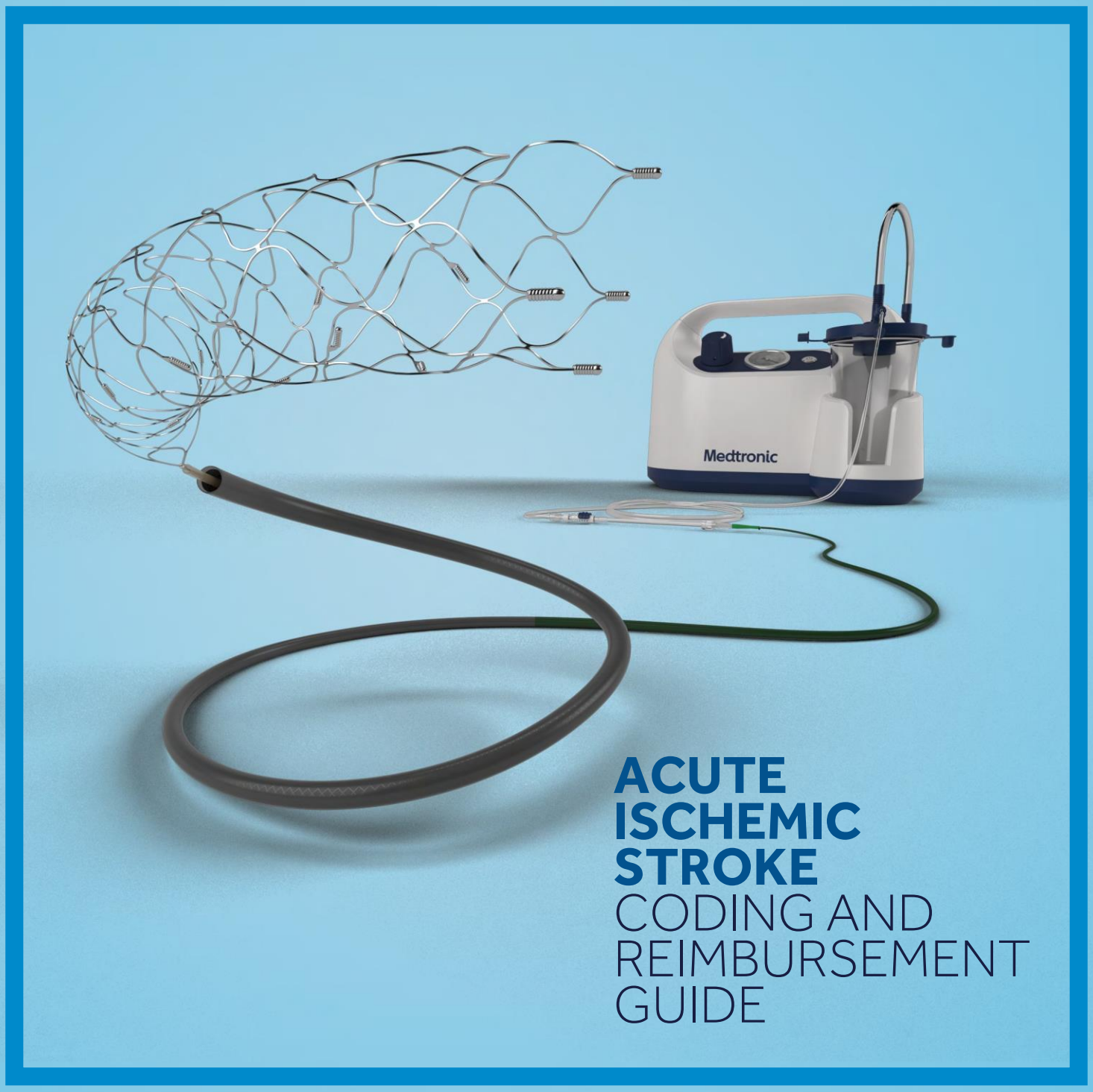
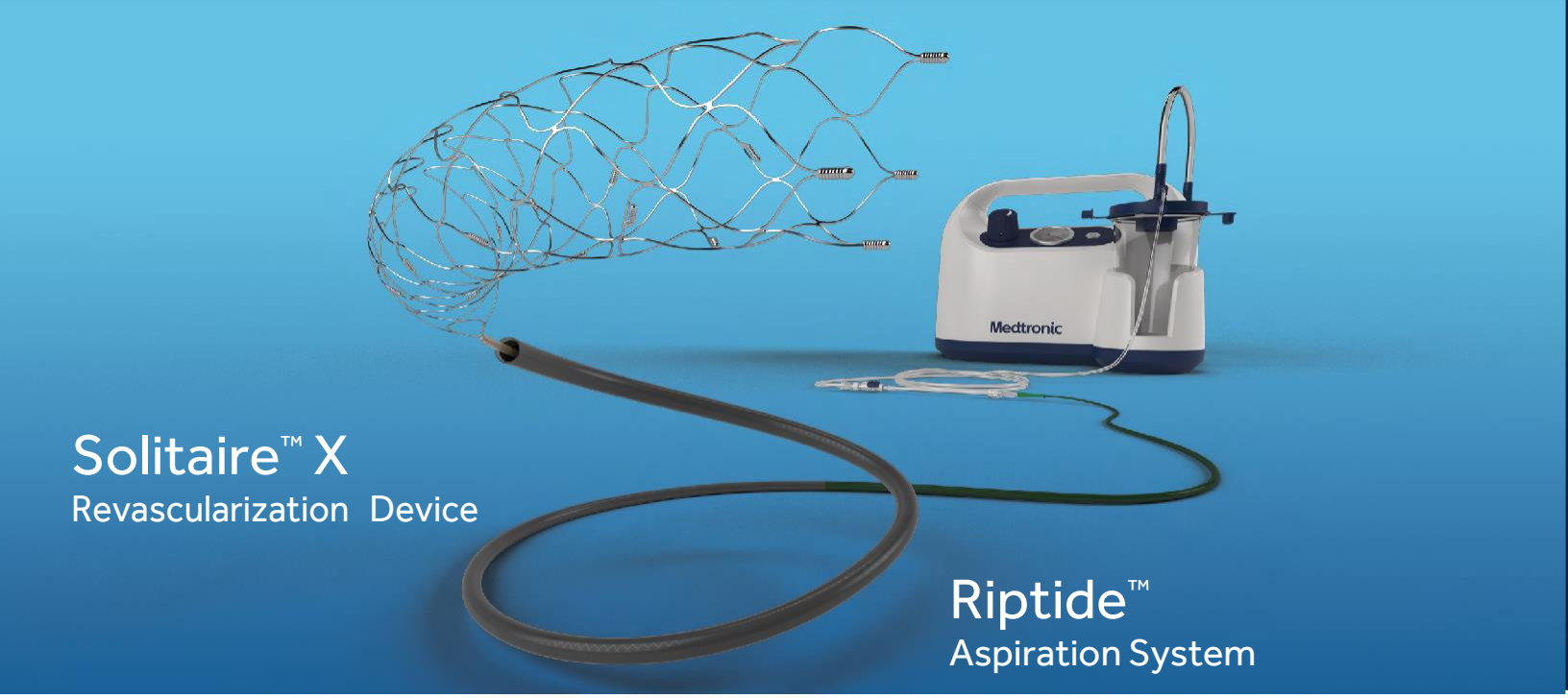


ACUTE ISCHEMIC STROKE CODING AND REIMBURSEMENT GUIDE

SOLITAIRE™ X REVASCULARIZATION DEVICE AND **RIPTIDE™** ASPIRATION SYSTEM

Medtronic



Solitaire™ X
Revascularization Device

Riptide™
Aspiration System

The Solitaire™ X Revascularization Device and the Riptide™ Aspiration System are used for neurovascular thrombectomy. Both remove clot from occluded intracranial vessels, via different techniques, to revascularize the vessels and restore blood flow.

The Solitaire™ X Revascularization Device is intended to restore blood flow by removing thrombus from a large intracranial vessel in patients experiencing ischemic stroke within 8 hours of symptom onset. Patients who are ineligible for intravenous tissue plasminogen activator (IV t-PA) or who fail IV t-PA therapy are candidates for treatment. Solitaire™ X Revascularization Device is indicated for use to restore blood flow in the neurovasculature by removing thrombus for the treatment of acute ischemic stroke to reduce disability in patients with a persistent, proximal anterior circulation, large vessel occlusion, and smaller core infarcts who have first received intravenous tissue plasminogen activator (IV t-PA). Endovascular therapy with the device should be started within 6 hours of symptom onset. The Solitaire™ X Revascularization Device is also indicated for use to restore blood flow in the neurovasculature by removing thrombus for the treatment of acute ischemic stroke to reduce disability in patients with a persistent, proximal anterior circulation, large vessel occlusion of the internal carotid artery (ICA) or middle cerebral artery (MCA)-M1 segments with smaller core infarcts (<70 cc by CTA or MRA, <25 cc by MR-DWI). Endovascular therapy with the device should start within 6-16 hours of time last seen well in patients who are ineligible for intravenous tissue plasminogen activator (IV t-PA) or who fail IV t-PA therapy.

The Riptide™ Aspiration System is intended for use in the revascularization of patients with acute ischemic stroke secondary to intracranial large vessel occlusive disease (within the internal carotid, middle cerebral - M1 and M2 segments, basilar and vertebral arteries) within 8 hours of symptom onset. Patients who are eligible for intravenous tissue plasminogen activator (IV t-PA) or who fail IV t-PA therapy are candidates for treatment.

The Solitaire™ X Revascularization Device is a stent retriever which removes clot by physically engaging the clot and withdrawing it from the vessel, usually with adjunctive local aspiration to retain the clot within the device. Stent retrievers are not used to dilate vessels and are not implanted. The Riptide™ Aspiration System performs clot aspiration thrombectomy, directly suctioning the clot through the catheter as the primary means of removing it.

Solitaire™ X Revascularization Device and Riptide™ Aspiration System may each be used as a sole therapy or they may be used together.

DIAGNOSIS CODING – PRECEREBRAL ARTERIES

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The following information is calculated per the footnotes included and does not take into effect Medicare payment reductions resulting from sequestration associated with the Budget Control Act of 2011. Sequestration reductions went into effect on April 1, 2013.

For questions please contact us at **neuro.us.reimbursement@medtronic.com**

ICD-10-CM DIAGNOSIS CODES[1] – *effective October 1, 2019*

ICD-10-CM diagnosis codes are used by both physicians and hospitals to report the indication for the procedure.

CODE[2]	CODE DESCRIPTION
ISCHEMIC STROKE: PRECEREBRAL ARTERIES	
I63.00	Cerebral infarction due to thrombosis of unspecified precerebral artery
I63.011	Cerebral infarction due to thrombosis of right vertebral artery
I63.012	Cerebral infarction due to thrombosis of left vertebral artery
I63.013	Cerebral infarction due to thrombosis of bilateral vertebral arteries
I63.019	Cerebral infarction due to thrombosis of unspecified vertebral artery
I63.02	Cerebral infarction due to thrombosis of basilar artery
I63.031	Cerebral infarction due to thrombosis of right carotid artery
I63.032	Cerebral infarction due to thrombosis of left carotid artery
I63.033	Cerebral infarction due to thrombosis of bilateral carotid arteries
I63.039	Cerebral infarction due to thrombosis of unspecified carotid artery
I63.09	Cerebral infarction due to thrombosis of other precerebral artery
I63.10	Cerebral infarction due to embolism of unspecified precerebral artery
I63.111	Cerebral infarction due to embolism of right vertebral artery

DIAGNOSIS CODING – PRECEREBRAL ARTERIES

CODE[2]	CODE DESCRIPTION
ISCHEMIC STROKE: PRECEREBRAL ARTERIES *continued...*	
I63.112	Cerebral infarction due to embolism of left vertebral artery
I63.113	Cerebral infarction due to embolism of bilateral vertebral arteries
I63.119	Cerebral infarction due to embolism of unspecified vertebral artery
I63.12	Cerebral infarction due to embolism of basilar artery
I63.131	Cerebral infarction due to embolism of right carotid artery
I63.132	Cerebral infarction due to embolism of left carotid artery
I63.133	Cerebral infarction due to embolism of bilateral carotid arteries
I63.139	Cerebral infarction due to embolism of unspecified carotid artery
I63.19	Cerebral infarction due to embolism of other precerebral artery
I63.20	Cerebral infarction due to unspecified occlusion or stenosis of unspecified precerebral arteries
I63.211	Cerebral infarction due to unspecified occlusion or stenosis of right vertebral artery
I63.212	Cerebral infarction due to unspecified occlusion or stenosis of left vertebral artery
I63.213	Cerebral infarction due to unspecified occlusion or stenosis of bilateral vertebral arteries
I63.219	Cerebral infarction due to unspecified occlusion or stenosis of unspecified vertebral artery
I63.22	Cerebral infarction due to unspecified occlusion or stenosis of basilar artery
I63.231	Cerebral infarction due to unspecified occlusion or stenosis of right carotid arteries
I63.232	Cerebral infarction due to unspecified occlusion or stenosis of left carotid arteries
I63.233	Cerebral infarction due to unspecified occlusion or stenosis of bilateral carotid arteries
I63.239	Cerebral infarction due to unspecified occlusion or stenosis of unspecified carotid artery
I63.29	Cerebral infarction due to unspecified occlusion or stenosis of other precerebral arteries

DIAGNOSIS CODING – CEREBRAL ARTERIES

CODE[2]	CODE DESCRIPTION
ISCHEMIC STROKE: CEREBRAL ARTERIES	
I63.30	Cerebral infarction due to thrombosis of unspecified cerebral artery
I63.311	Cerebral infarction due to thrombosis of right middle cerebral artery
I63.312	Cerebral infarction due to thrombosis of left middle cerebral artery
I63.313	Cerebral infarction due to thrombosis of bilateral middle cerebral arteries
I63.319	Cerebral infarction due to thrombosis of unspecified middle cerebral artery
I63.321	Cerebral infarction due to thrombosis of right anterior cerebral artery
I63.322	Cerebral infarction due to thrombosis of left anterior cerebral artery
I63.323	Cerebral infarction due to thrombosis of bilateral anterior cerebral arteries
I63.329	Cerebral infarction due to thrombosis of unspecified anterior cerebral artery
I63.331	Cerebral infarction due to thrombosis of right posterior cerebral artery
I63.332	Cerebral infarction due to thrombosis of left posterior cerebral artery
I63.333	Cerebral infarction due to thrombosis of bilateral posterior cerebral arteries
I63.339	Cerebral infarction due to thrombosis of unspecified posterior cerebral artery
I63.341	Cerebral infarction due to thrombosis of right cerebellar artery
I63.342	Cerebral infarction due to thrombosis of left cerebellar artery
I63.343	Cerebral infarction due to thrombosis of bilateral cerebellar arteries
I63.349	Cerebral infarction due to thrombosis of unspecified cerebellar artery
I63.39	Cerebral infarction due to thrombosis of other cerebral artery
I63.40	Cerebral infarction due to embolism of unspecified cerebral artery
I63.411	Cerebral infarction due to embolism of right middle cerebral artery
I63.412	Cerebral infarction due to embolism of left middle cerebral artery
I63.413	Cerebral infarction due to embolism of bilateral middle cerebral arteries
I63.419	Cerebral infarction due to embolism of unspecified middle cerebral artery
I63.421	Cerebral infarction due to embolism of right anterior cerebral artery
I63.422	Cerebral infarction due to embolism of left anterior cerebral artery
I63.423	Cerebral infarction due to embolism of bilateral anterior cerebral arteries
I63.429	Cerebral infarction due to embolism of unspecified anterior cerebral artery
I63.431	Cerebral infarction due to embolism of right posterior cerebral artery

DIAGNOSIS CODING – CEREBRAL ARTERIES

CODE[2]	CODE DESCRIPTION
ISCHEMIC STROKE: CEREBRAL ARTERIES *continued...*	
I63.432	Cerebral infarction due to embolism of left posterior cerebral artery
I63.433	Cerebral infarction due to embolism of bilateral posterior cerebral arteries
I63.439	Cerebral infarction due to embolism of unspecified posterior cerebral artery
I63.441	Cerebral infarction due to embolism of right cerebellar artery
I63.442	Cerebral infarction due to embolism of left cerebellar artery
I63.443	Cerebral infarction due to embolism of bilateral cerebellar arteries
I63.449	Cerebral infarction due to embolism of unspecified cerebellar artery
I63.49	Cerebral infarction due to embolism of other cerebral artery
I63.50	Cerebral infarction due to unspecified occlusion or stenosis of unspecified cerebral artery
I63.511	Cerebral infarction due to unspecified occlusion or stenosis of right middle cerebral artery
I63.512	Cerebral infarction due to unspecified occlusion or stenosis of left middle cerebral artery
I63.513	Cerebral infarction due to unspecified occlusion or stenosis of bilateral middle cerebral arteries
I63.519	Cerebral infarction due to unspecified occlusion or stenosis of unspecified middle cerebral artery
I63.521	Cerebral infarction due to unspecified occlusion or stenosis of right anterior cerebral artery
I63.522	Cerebral infarction due to unspecified occlusion or stenosis of left anterior cerebral artery
I63.523	Cerebral infarction due to unspecified occlusion or stenosis of bilateral anterior cerebral arteries
I63.529	Cerebral infarction due to unspecified occlusion or stenosis of unspecified anterior cerebral artery
I63.531	Cerebral infarction due to unspecified occlusion or stenosis of right posterior cerebral artery
I63.532	Cerebral infarction due to unspecified occlusion or stenosis of left posterior cerebral artery
I63.533	Cerebral infarction due to unspecified occlusion or stenosis of bilateral posterior cerebral arteries
I63.539	Cerebral infarction due to unspecified occlusion or stenosis of unspecified posterior cerebral artery
I63.541	Cerebral infarction due to unspecified occlusion or stenosis of right cerebellar artery
I63.542	Cerebral infarction due to unspecified occlusion or stenosis of left cerebellar artery
I63.543	Cerebral infarction due to unspecified occlusion or stenosis of bilateral cerebellar arteries
I63.549	Cerebral infarction due to unspecified occlusion or stenosis of unspecified cerebellar artery
I63.59	Cerebral infarction due to unspecified occlusion or stenosis of other cerebral arteries
I63.6	Cerebral infarction due to cerebral venous thrombosis, nonpyogenic
I63.89	Other cerebral infarction
I63.9	Cerebral Infarction, unspecified
HISTORY OF IV t-PA[3]	
Z92.82	Status post-administration of tPA (rtPA) in a different facility within the last 24 hours prior to admission to current facility

HOSPITAL INPATIENT PROCEDURE CODING AND DRG PAYMENT

ICD-10-PCS PROCEDURE CODES[4] – *effective October 1, 2019*

ICD-10-PCS procedure codes are used by hospitals to report surgeries and procedures performed in the inpatient setting.

The procedure codes differentiate stent retriever thrombectomy, ie, via the Solitaire™ X Revascularization Device, from direct clot aspiration thrombectomy, ie, via the Riptide™ Aspiration System. Thrombectomy via the Solitaire™ X Revascularization Device uses qualifier 7-Stent Retriever while thrombectomy via the Riptide™ Aspiration System uses default qualifier Z. When thrombectomy is performed using the Solitaire™ X Revascularization Device and Riptide™ Aspiration System together, only the stent retriever code is assigned. No additional code is needed.[5]

CODE[6]	CODE DESCRIPTION
THROMBECTOMY VIA THE SOLITAIRE™ X REVASCULARIZATION DEVICE WITH LOCAL ADJUNCTIVE ASPIRATION SYRINGE	
03CG3Z7	Extirpation of matter from intracranial artery using stent retriever, percutaneous approach[7]
03CP3Z7	Extirpation of matter from right vertebral artery using stent retriever, percutaneous approach
03CQ3Z7	Extirpation of matter from left vertebral artery using stent retriever, percutaneous approach
THROMBECTOMY VIA THE RIPTIDE™ ASPIRATION SYSTEM	
03CG3ZZ	Extirpation of matter from intracranial artery, percutaneous approach[7]
03CP3ZZ	Extirpation of matter from right vertebral artery, percutaneous approach
03CQ3ZZ	Extirpation of matter from left vertebral artery, percutaneous approach
THROMBECTOMY VIA THE SOLITAIRE™ X REVASCULARIZATION DEVICE AND ADJUNCTIVE RIPTIDE™ ASPIRATION SYSTEM	
03CG3Z7	Extirpation of matter from intracranial artery using stent retriever, percutaneous approach[7]
03CP3Z7	Extirpation of matter from right vertebral artery using stent retriever, percutaneous approach
03CQ3Z7	Extirpation of matter from left vertebral artery using stent retriever, percutaneous approach
CEREBRAL ARTERIOGRAPHY	
B31R1ZZ	Fluoroscopy of intracranial arteries using low osmolar contrast
B31RYZZ	Fluoroscopy of intracranial arteries using other contrast[8]
USE OF INTRAVENOUS THROMBOLYTIC (IV-TPA)	
3E03317	Introduction of other thrombolytic into peripheral vein, percutaneous approach

HOSPITAL INPATIENT PROCEDURE CODING AND DRG PAYMENT

DRG ASSIGNMENT FY2020 – *effective October 1, 2019*

Under Medicare's MS-DRG methodology for hospital inpatient payment, each inpatient stay is assigned to one of about 760 diagnosis-related groups, based on the ICD-10 codes assigned to the diagnoses and procedures. Each MS-DRG has a relative weight that is then converted to a fl at payment amount. Only one MS-DRG is assigned for each inpatient stay, regardless of the number of procedures performed. MS-DRGs shown are those typically assigned to the following scenarios.

MS-DRG[9]	MS-DRG TITLE[9,10]	FY2020 RELATIVE WEIGHT[9]	FY2020 GEOMETRIC MEAN LENGTH OF STAY[9]	FY2020 SUBJECT TO PACT?[9,11]	FY 2020 MEDICARE NATIONAL AVERAGE[12]
ISCHEMIC STROKE WITH REMOVAL OF THROMBUS VIA STENT RETRIEVER (SOLITAIRE™ X REVASCULARIZATION DEVICE) OR DIRECT CLOT ASPIRATION (RIPTIDE™ ASPIRATION SYSTEM) OR BOTH					
023	Craniotomy with Major Device Implant/Acute Complex Central Nervous System Principal Diagnosis W MCC[13]	5.6171	7.1	Yes	$35,157
024	Craniotomy with Major Device Implant/Acute Complex Central Nervous System Principal Diagnosis WO MCC[13]	4.0165	4.2	Yes	$25,139
ISCHEMIC STROKE WITH ADMINISTRATION OF THROMBOLYTIC ONLY					
061	Ischemic Stroke, Precerebral Occlusion or Transient Ischemia with Thrombolytic Agent W MCC	2.7935	4.8	No	$17,484
062	Ischemic Stroke, Precerebral Occlusion or Transient Ischemia with Thrombolytic Agent W CC	2.0112	3.3	No	$12,588
063	Ischemic Stroke, Precerebral Occlusion or Transient Ischemia with Thrombolytic Agent WO CC/MCC	1.6808	2.4	No	$10,520
ISCHEMIC STROKE WITH MEDICAL MANAGEMENT ONLY					
064	Intracranial Hemorrhage or Cerebral Infarction W MCC	1.8748	4.3	Yes	$11,734
065	Intracranial Hemorrhage or Cerebral Infarction WCC or TPA in 24 Hours	1.0277	3.0	Yes	$6,432
066	Intracranial Hemorrhage or Cerebral Infarction WO CC/MCC	0.7170	2.0	Yes	$4,488

HCPCS DEVICE CODES

HCPCS device codes are assigned by the entity that purchased and supplied the device to the patient. In the case of Solitaire™ X Revascularization Device and the Riptide™ Aspiration System, that is the hospital. However, hospitals assign HCPCS device codes only when the device is provided in the hospital outpatient setting. HCPCS device codes cannot be assigned or billed for procedures performed in the inpatient setting. If a hospital wishes to assign a HCPCS device code for an inpatient case for internal purposes only, such as for tracking, please refer to the HCPCS addendum for references.

PHYSICIAN PROCEDURE CODING AND PAYMENT

PHYSICIAN PROCEDURE CODING AND PAYMENT

Physicians use CPT® codes for all services.

Under Medicare's Resource-Based Relative Value Scale (RBRVS) methodology for physician payment, each CPT® code is assigned a point value, the relative value unit (RVU), which is then converted to a flat payment amount.

CPT CODES [14] *-effective January 1, 2020*

CY 2020 RBRVS FACTORS[15] *– effective January 1, 2020*

CPT® CODE	CODE DESCRIPTION	MULTIPLE PROCEDURE DISCOUNTING[16]	CY2020 MEDICARE RVUS (FACILITY SETTING)[17]	CY2020 MEDICARE NATIONAL AVERAGE (FACILITY SETTING)[17,18]
61645	Percutaneous arterial transluminal mechanical thrombectomy and/or infusion for thrombolysis, intracranial, any method, including diagnostic angiography, fluoroscopic guidance, catheter placement, and intraprocedural pharmacological thrombolytic injection(s)	No	24.19	$873

Thrombectomy code 61645 encompasses intracranial thrombectomy by any method, including mechanical retrieval device and aspiration catheter.[19]

CPT defines code 61645 as a comprehensive procedure which includes: catheterization, diagnostic angiography in the vessel territory treated, imaging guidance, radiological supervision and interpretation, thrombolytic injection during the procedure, completion angiography, and all neurologic and hemodynamic monitoring of the patient. These components are not coded separately. Hwoever, diagnostic angiography in vessel territories that were not treated can be coded separately. Code 61645 may be reported once for each intracranial vascular territory treated. There are three territories: 1) right carotid, 2) left carotid, and 3) vertebro-basilar.[19]

ACUTE ISCHEMIC STROKE PATIENT CODING SCENARIOS

DIAGNOSIS + PROCEDURES CODING EXAMPLES FOR HOSPITALS AND PHYSICIANS

SCENARIO #1

A patient arrives at a primary or comprehensive stroke center and is admitted for care as an inpatient with a diagnosis of acute ischemic stroke. No interventions are performed and the patient is treated with medical management only.

ICD-10-CM DIAGNOSIS CODES

CODE	CODE DESCRIPTION
ISCHEMIC STROKE	
I63.00-I63.29	Cerebral infarction, precerebral arteries
I63.30-I63.9	Cerebral infarction, cerebral arteries
Note: Use one code from either of these ranges. For ischemic stroke for which no further information is available on the nature or location of the obstruction, the default diagnosis code is I63.9, Cerebral infarction, unspecified.	

HOSPITAL INPATIENT PROCEDURE CODING

Because no interventions are performed, no inpatient ICD-10-PCS procedure codes are assigned.

HOSPITAL INPATIENT PAYMENT
MS-DRG PAYMENT – *effective October 1, 2019*

MS-DRG	MS-DRG TITLE	FY2020 RELATIVE WEIGHT[9]	FY2020 GEOMETRIC MEAN LENGTH OF STAY	FY2020 SUBJECT TO PACT?[9,11]	FY 2020 MEDICARE NATIONAL AVERAGE[12]
064	Intracranial Hemorrhage or Cerebral Infarction W MCC	1.8748	4.3	Yes	$11,734
065	**Intracranial Hemorrhage or Cerebral Infarction W CC or IV TPA in 24 Hours**	1.0277	3.0	Yes	$6,432
066	Intracranial Hemorrhage or Cerebral Infarction WO CC/MCC	0.7170	2.0	Yes	$4,488

PHYSICIAN PROCEDURE CODING AND RBRVS PAYMENT – *effective January 1, 2020*

Because no procedures are performed, physician coding and payment are determined by the evaluation and management services provided to the patient during the inpatient admission.

SCENARIO #2

A patient arrives at a primary stroke center. Following a CT scan, IV t-PA is administered for acute ischemic stroke, and the patient is admitted for medical care as an inpatient. No further interventions are performed.

ICD-10-CM DIAGNOSIS CODES

CODE	CODE DESCRIPTION
I63.00-I63.29	Cerebral infarction, precerebral arteries
I63.30-I63.9	Cerebral infarction, cerebral arteries

Note: Use one code from either of these ranges. For ischemic stroke for which no further information is available on the nature or location of the obstruction, the default diagnosis code is I63.9, Cerebral infarction, unspecified.

HOSPITAL INPATIENT PROCEDURE CODING
ICD-10-PCS PROCEDURE CODES

CODE	CODE DESCRIPTION
ADMINISTRATION OF THROMBOLYTIC (IV t-PA)	
3E03317	Introduction of other thrombolytic into peripheral vein, percutaneous approach

HOSPITAL INPATIENT PAYMENT
MS-DRG PAYMENT – *effective October 1, 2019*

MS-DRG [9]	MS-DRG TITLE [9,10]	FY2020 RELATIVE WEIGHT [9]	FY2020 GEOMETRIC MEAN LENGTH OF STAY	FY2020 SUBJECT TO PACT? [9,11]	FY2020 MEDICARE NATIONAL AVERAGE [12]
061	Ischemic Stroke, Precerebral Occlusion or Transient Ischemia with Thromboytic Agent W MCC	2.7935	4.8	No	$17,484
062	Ischemic Stroke, Precerebral Occlusion or Transient Ischemia with Thromboytic Agent W CC	2.0112	3.3	No	$12,588
063	Ischemic Stroke, Precerebral Occlusion or Transient Ischemia with Thromboytic Agent WO CC/MCC	1.6808	2.4	No	$10,520

PHYSICIAN PROCEDURE CODING AND RBRVS PAYMENT – *effective January 1, 2020*

CODE[1]	CODE DESCRIPTION	CY2020 MEDICARE RVUS (FACILITY SETTING)	CY2020 MEDICARE NATIONAL AVERAGE (FACILITY SETTING)
ADMINISTRATION OF THROMBOLYTIC (IV t-PA)			
37195	Thrombolysis, cerebral, by intravenous infusion	contractor priced	
Note: This service is usually performed by the hospital nurse, under physician supervision. The Medicare Administrative Contractor establishes RVUs and any payment to the physician only on a case-by-case basis, generally after review of documentation.			
EVALUATION AND MANAGEMENT			
Physician coding and payment are determined by the evaluation and management services provided to the patient during the inpatient admission.			

SCENARIO #3

In this "drip-and-ship" scenario, a patient arrives at a primary stroke center. After CT scan, IV t-PA is administered in the emergency department for acute ischemic stroke and the patient is transferred to a comprehensive stroke center for inpatient admission. *The codes and payments shown below are for the transferring primary stroke center only.*

ICD-10-CM DIAGNOSIS CODES

CODE	CODE DESCRIPTION
I63.00-I63.29	Cerebral infarction, precerebral arteries
I63.30-I63.9	Cerebral infarction, cerebral arteries
Note: Use one code from either of these ranges. For ischemic stroke for which no further information is available on the nature or location of the obstruction, the default diagnosis code is I63.9, Cerebral infarction, unspecified.	

HOSPITAL OUTPATIENT PROCEDURE AND DRUG CODING AND APC PAYMENT – *effective January 1, 2020*

CPT®/ HCPCS II CODES	CODE DESCRIPTION	APC	APC TITLE	STATUS INDICATOR	CY2020 RELATIVE WEIGHT	CY2020 MEDICARE NATIONAL AVERAGE
ADMINISTRATION OF THROMBOLYTIC (IV t-PA)						
37195	Thrombolysis, cerebral, by intravenous infusion	5694	Level 4 Drug Administration	T	3.8320	$310
THROMBOLYTIC (IV t-PA) DRUG						
J2997	Injection, alteplase recombinant, 1 mg	7048	Alteplase recombinant	K	NA	$88 per unit
HOSPITAL EMERGENCY DEPARTMENT VISIT						
99291	Critical care, evaluation and management of the critically ill or critically injured patient; first 30-74 minutes	5041	Critical Care	**S**	8.2514	$667
+99292	Critical care, evaluation and management of the critically ill or critically injured patient; each additional 30 minutes	–	–	N	–	–
Note: Status Indicator shows how the code is handled for the purpose of hospital outpatient payment. Status K means the drug is separately payable at the rate shown, per unit. The drug rate can be revised each quarter. The rate shown is for 1stQ 2020. Status T means that a multiple procedure reduction may apply to the APC payment rate. Status S means that the code pays at 100% of the rate regardless of whether it is submitted with other procedures. Status N means that the code is packaged into the primary service and is not separately payable.						

PHYSICIAN PROCEDURE CODING AND RBRVS PAYMENT – *effective January 1, 2020*

CPT® CODE	CODE DESCRIPTION	CY2020 MEDICARE RVUS (FACILITY SETTING)	CY2020 MEDICARE NATIONAL AVERAGE (FACILITY SETTING)
ADMINISTRATION OF THROMBOLYTIC (IV t-PA)			
37195	Thrombolysis, cerebral, by intravenous infusion	contractor priced	
Note: This service is usually performed by the hospital nurse, under physician supervision. The Medicare Administrative Contractor establishes RVUs and any payment to the physician only on a case-by-case basis, generally after review of documentation.			
EVALUATION AND MANAGEMENT			
99291	Critical care, evaluation and management of the critically ill or critically injured patient; first 30-74 minutes	6.28	$227
+99292	Critical care, evaluation and management of the critically ill or critically injured patient; each additional 30 minutes	3.16	$114

SCENARIO #4

In this "drip-and-ship" scenario, a patient was previously diagnosed with acute ischemic stroke due to thrombus of the left internal carotid artery and treated with IV t-PA in the emergency department of another hospital, then transferred to a comprehensive stroke center. The patient is admitted to the comprehensive stroke center as an inpatient and does not undergo any further interventions or procedures. ***The codes and payments shown below are for the receiving comprehensive stroke center only.***

ICD-10-CM DIAGNOSIS CODES

CODE	CODE DESCRIPTION
ISCHEMIC STROKE	
I63.032	Cerebral infarction due to thrombosis of left carotid artery
PRIOR IV t-PA	
Z92.82	Status post-administration of tPA (rtPA) in a different facility within the last 24 hours prior to admission to current facility

HOSPITAL INPATIENT PAYMENT
MS-DRG PAYMENT – *effective October 1, 2019*

MS-DRG [9]	MS-DRG TITLE [9,10]	FY2020 RELATIVE WEIGHT [9]	GEOMETRIC MEAN LENGTH	SUBJECT TO PACT? [9,11]	FY2020 MEDICARE NATIONAL AVERAGE [12]
065	**Intracranial Hemorrhage or Cerebral Infarction W CC or TPA in 24 Hours**	1.0277	3.0	Yes	$6,432

PHYSICIAN PROCEDURE CODING AND RBRVS PAYMENT – *effective January 1, 2020*

Because no procedures are performed at the comprehensive stroke center, physician coding and payment are determined by the evaluation and management services provided to the patient during the inpatient admission.

SCENARIO #5

In this "drip-and-ship scenario," a patient was previously treated with IV t-PA in the emergency department of a primary stroke center and was then transferred to a comprehensive stroke center and admitted as an inpatient. Following diagnostic angiography, a Solitaire™ X Revascularization Device was deployed in the right supraclinoid internal carotid artery and thrombectomy is performed. . *The codes and payments shown below are for the receiving comprehensive stroke center only.*

ICD-10-CM DIAGNOSIS CODES

CODE	CODE DESCRIPTION
ISCHEMIC STROKE	
I63.031	Cerebral infarction due to thrombosis of right carotid artery
PRIOR IV t-PA	
Z92.82	Status post-administration of tPA (rtPA) in a different facility within the last 24 hours prior to admission to current facility

HOSPITAL INPATIENT PROCEDURE CODING
ICD-10-PCS PROCEDURE CODES – *effective October 1, 2019*

CODE	CODE DESCRIPTION
THROMBECTOMY WITH THE SOLITAIRE™ X REVASCULARIZATION	
03CG3Z7	Extirpation of matter from intracranial artery, using stent retriever, percutaneous approach
DIAGNOSTIC CEREBRAL ANGIOGRAPHY	
B31RYZZ	Fluoroscopy of intracranial arteries using other contrast

HOSPITAL INPATIENT PAYMENT
MS-DRG PAYMENT – *effective October 1, 2019*

MS-DRG[9]	MS-DRG TITLE[9,10]	FY2020 RELATIVE WEIGHT[9]	FY2020 GEOMETRIC MEAN LENGTH OF STAY	FY2020 SUBJECT TO PACT?[9,11]	FY2020 MEDICARE NATIONAL AVERAGE[12]
023	Craniotomy with Major Device Implant/Acute Complex Central Nervous System Principal Diagnosis W MCC	5.6171	7.1	Yes	$35,157
024	Craniotomy with Major Device Implant/Acute Complex Central Nervous System Principal Diagnosis WO MCC	**4.0165**	**4.2**	Yes	$25,139

SCENARIO #5 (continued)

PHYSICIAN PROCEDURE CODING AND RBRVS PAYMENT– *effective January 1, 2020*

CPT® CODE	CODE DESCRIPTION	MULTIPLE PROCEDURE DISCOUNTING?	CY2020 MEDICARE RVUS (FACILITY SETTING)	CY2020 MEDICARE NATIONAL AVERAGE (FACILITY SETTING)
MECHANICAL THROMBECTOMY VIA DEVICE SUCH AS SOLITAIRE™ X REVASCULARIZATION DEVICE				
61645	Percutaneous arterial transluminal mechanical thrombectomy and/or infusion for thrombolysis, intracranial, any method, including diagnostic angiography, fluoroscopic guidance, catheter placement, and intraprocedural pharmacological thrombolytic injection(s)	N	24.19	$873
DIAGNOSTIC CEREBRAL ANGIOGRAPHY (CODED ONLY FOR NON-TREATED TERRITORIES)				
36223	Selective catheter placement, common carotid or innominate artery, unilateral, any approach, with angiography of the ipsilateral intracranial carotid circulation and all associated radiological supervision and interpretation, includes angiography of the extracranial carotid and cervicocerebral arch, when performed	Y	9.18	$331
36224	Selective catheter placement, internal carotid artery, unilateral, with angiography of the ipsilateral intracranial carotid circulation and all associated radiological supervision and interpretation, includes angiography of the extracranial carotid and cervicocerebral arch, when performed	Y	10.43	$376
36225	Selective catheter placement, subclavian or innominate artery, unilateral, with angiography of the ipsilateral vertebral circulation and all associated radiological supervision and interpretation, includes angiography of the cervicocerebral arch, when performed	Y	9.15	$330
36226	Selective catheter placement, vertebral artery, unilateral, with angiography of the ipsilateral vertebral circulation and all associated radiological supervision and interpretation, includes angiography of the cervicocerebral arch, when performed	Y	10.28	$371
+36228	Selective catheter placement, each intracranial branch of the internal carotid or vertebral arteries, unilateral, with angiography of the selected vessel circulation and all associated radiological supervision and interpretation (eg, middle cerebral artery, posterior inferior cerebellar artery)	N	6.98	$252

Note: Diagnostic angiography is integral and not coded separately when performed in the treated territory. However, diagnostic angiography may be coded separately when performed in non-treated territories. The arteriography codes identify the location of the catheter for injection as well as the areas that are imaged following the injection. Only one code can be used from 36223-36224 for carotid imaging. Likewise, only one code can be used from 36225-36226 for vertebral imaging. Add-on code +36228 for additional cerebral vessel catheterization and injection must be used together with one of the carotid or vertebral codes. Depending on the specific nature of the diagnostic angiography, the payment shown for each code may be subject to 150% increase for bilateral angiography or 50% reduction for multiple procedure discounting. When submitted with thrombectomy code 61645, the diagnostic angiography codes require a modifier, eg, -59, to indicate the distinct procedural service in a non-treated territory.

EVALUATION AND MANAGEMENT

Physician coding and payment are determined by the evaluation and management services provided to the patient during the inpatient admission.

SCENARIO #6

A patient is treated with IV t-PA in the emergency department of the comprehensive stroke center and admitted as an inpatient. Diagnostic angiography is performed with catheterization of the left and right vertebral arteries, and left and right internal carotid arteries. Clot is identified in the right middle cerebral artery and the catheter is advanced to the site for further angiography. A Solitaire™ X Revascularization Device is then deployed in the right middle carotid artery and thrombectomy is performed.

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ICD-10-CM DIAGNOSIS CODES

CODE	CODE DESCRIPTION
ISCHEMIC STROKE	
I63.311	Cerebral infarction due to thrombosis of right middle cerebral artery

HOSPITAL INPATIENT PROCEDURE CODING
ICD-10-PCS PROCEDURE CODES – *effective October 1, 2019*

CODE	CODE DESCRIPTION
THROMBECTOMY WITH THE SOLITAIRE™ X REVASCULARIZATION	
03CG3Z7	Extirpation of matter from intracranial artery, using stent retriever, percutaneous approach
ADMINSTRATION OF THROMBOLYTIC (IV T-PA)	
3E03317	Introduction of other thrombolytic into peripheral vein, percutaneous approach
DIAGNOSTIC ANGIOGRAPHY	
B31RYZZ	Fluoroscopy of intracranial arteries using other contrast

HOSPITAL INPATIENT PAYMENT
MS-DRG PAYMENT – *effective October 1, 2019*

MS-DRG[9]	MS-DRG TITLE[9,10]	FY2020 RELATIVE WEIGHT[9]	FY2020 GEOMETRIC MEAN LENGTH OF STAY	FY2020 SUBJECT TO PACT?[9,11]	FY2020 MEDICARE NATIONAL AVERAGE[12]
023	Craniotomy with Major Device Implant/Acute Complex Central Nervous System Principal Diagnosis W MCC	5.6171	7.1	Yes	$35,157
024	Craniotomy with Major Device Implant/Acute Complex Central Nervous System Principal Diagnosis WO MCC	4.0165	4.2	Yes	$25,139

SCENARIO #6 (continued)

PHYSICIAN PROCEDURE CODING AND RBRVS PAYMENT– *effective January 1, 2020*

CPT® CODE	CODE DESCRIPTION	MULTIPLE PROCEDURE DISCOUNTING?	CY2020 MEDICARE RVUS (FACILITY SETTING)	CY2020 MEDICARE NATIONAL AVERAGE (FACILITY SETTING)
REMOVAL OF THROMBUS VIA STENT RETRIEVER ONLY, SUCH AS THE SOLITAIRE™X REVASCULARIZATION DEVICE				
61645	Percutaneous arterial transluminal mechanical thrombectomy and/or infusion for thrombolysis, intracranial, any method, including diagnostic angiography, fluoroscopic guidance, catheter placement, and intraprocedural pharmacological thrombolytic injection(s)	N	24.19	$873
DIAGNOSTIC VERTEBRAL ANGIOGRAPHY (CODED ONLY FOR NON-TREATED TERRITORIES)				
36226-50-59	Selective catheter placement, vertebral artery, unilateral, with angiography of the ipsilateral vertebral circulation and all associated radiological supervision and interpretation, includes angiography of the cervicocerebral arch, when performed	Y	10.28	$371
36224-59	Selective catheter placement, internal carotid artery, unilateral, with angiography of the ipsilateral intracranial carotid circulation and all associated radiological supervision and interpretation, includes angiography of the extracranial carotid and cervicocerebral arch, when performed	Y	10.43	$376
Note: Diagnostic angiography is integral and not coded separately when performed in the treated territory. However, diagnostic angiography may be coded sepa-rately when performed in non-treated territories. In this scenario, bilateral (-50) vertebral angiography and left internal carotid angiography can be coded because they are not the treated territory. Modifier -59 is necessary to indicate this. The right internal carotid angiography, including the MCA, cannot be coded because this is the treated territory. The payment shown for each angiography code may be subject to 150% increase for bilateral angiography or 50% reduction for multiple procedure discounting.				
ADMINISTRATION OF THROMBOLYTIC (IV t-PA)				
37195	Thrombolysis, cerebral, by intravenous infusion		contractor priced	
Note: This service is usually performed by the hospital nurse, under physician supervision. The Medicare Administrative Contractor establishes RVUs and any payment to the physician only on a case-by-case basis, generally after review of documentation.				
EVALUATION AND MANAGEMENT				
Physician coding and payment are determined by the evaluation and management services provided to the patient during the inpatient admission.				

SCENARIO #7

A patient arrives in the emergency department of a comprehensive stroke center. Following CT angiography which shows occlusion in the distal basilar artery, the patient is treated with IV t-PA and admitted as an inpatient. Diagnostic angiography of the vertebro-basilar circulation is performed and clot is seen the distal basilar artery. The React™ 68 catheter or React™ 71 catheter (as part of the Riptide™ Aspiration System) is advanced to the occluded basilar segment and direct aspiration thrombectomy is performed.

ICD-10-CM DIAGNOSIS CODES

CODE	CODE DESCRIPTION
ISCHEMIC STROKE	
I63.02	Cerebral infarction due to thrombosis of basilar artery

HOSPITAL INPATIENT PROCEDURE CODING
ICD-10-PCS PROCEDURE CODES – *effective October 1, 2019*

CODE	CODE DESCRIPTION
THROMBECTOMY VIA THE RIPTIDE™ ASPIRATION SYSTEM	
03CG3ZZ	Extirpation of matter from intracranial artery, percutaneous approach
ADMINSTRATION OF THROMBOLYTIC (IV T-PA)	
3E03317	Introduction of other thrombolytic into peripheral vein, percutaneous approach
DIAGNOSTIC ANGIOGRAPHY	
B31RYZZ	Fluoroscopy of intracranial arteries using other contrast

HOSPITAL INPATIENT PAYMENT
MS-DRG PAYMENT – *effective October 1, 2019*

MS-DRG[9]	MS-DRG TITLE[9,10]	FY2020 RELATIVE WEIGHT[9]	FY2020 GEOMETRIC MEAN LENGTH OF STAY	FY2020 SUBJECT TO PACT?[9,11]	FY2020 MEDICARE NATIONAL AVERAGE[12]
023	Craniotomy with Major Device Implant/Acute Complex Central Nervous System Principal Diagnosis W MCC	5.6171	7.1	Yes	$35,157
024	Craniotomy with Major Device Implant/Acute Complex Central Nervous System Principal Diagnosis WO MCC	4.0165	4.2	Yes	$25,139

PHYSICIAN PROCEDURE CODING AND RBRVS PAYMENT– *effective January 1, 2019*

CPT® CODE	CODE DESCRIPTION	PROCEDURE DISCOUNTING?	CY2020 MEDICARE RVUS (FACILITY SETTING)	CY2020 MEDICARE NATIONAL AVERAGE (FACILITY SETTING)
MECHANICAL THROMBECTOMY VIA DEVICE SUCH AS THE RIPTIDE™ ASPIRATION SYSTEM				
61645	Percutaneous arterial transluminal mechanical thrombectomy and/or infusion for thrombolysis, intracranial, any method, including diagnostic angiography, fluoroscopic guidance, catheter placement, and intraprocedural pharmacological thrombolytic injection(s)	N	24.19	$873
Note: Diagnostic angiography is integral and not coded separately when performed in the treated territory, as is the case in this scenario.				
ADMINISTRATION OF THROMBOLYTIC (IV t-PA)				
37195	Thrombolysis, cerebral, by intravenous infusion		contractor priced	
Note: This service is usually performed by the hospital nurse, under physician supervision. The Medicare Administrative Contractor establishes RVUs and any payment to the physician only on a case-by-case basis, generally after review of documentation.				
EVALUATION AND MANAGEMENT				
Physician coding and payment are determined by the evaluation and management services provided to the patient during the inpatient admission.				

SCENARIO #8

A patient arrives in the emergency department of a comprehensive stroke center. Following CT angiography which shows occlusion in the distal basilar artery, the patient is treated with IV t-PA and admitted as an inpatient. Diagnostic angiography is performed for the vertebro-basilar circulation and clot is seen the distal basilar artery. The React™ 68 Catheter or React™ 71 catheter (as part of the Riptide™ Aspiration System) is advanced to the occluded basilar segment and direct aspiration thrombectomy is applied. Although blood flow has been restored, the physician identifies an opportunity to further improve blood flow and decides to deliver and deploy a Solitaire™ X Revascularization Device to the occlusion site. While retrieving the Solitaire™ X Revascularization Device, adjunctive aspiration is provided via the Riptide™ Aspiration System.

ICD-10-CM DIAGNOSIS CODES

CODE	CODE DESCRIPTION
ISCHEMIC STROKE	
I63.02	Cerebral infarction due to thrombosis of basilar artery

HOSPITAL INPATIENT PROCEDURE CODING
ICD-10-PCS PROCEDURE CODES – *effective October 1, 2019*

CODE	CODE DESCRIPTION
THROMBECTOMY WITH THE SOLITAIRE™ X REVASCULARIZATION DEVICE AND RIPTIDE™ ASPIRATION	
03CG3Z7	Extirpation of matter from intracranial artery, using stent retriever, percutaneous approach
ADMINSTRATION OF THROMBOLYTIC (IV T-PA)	
3E03317	Introduction of other thrombolytic into peripheral vein, percutaneous approach
DIAGNOSTIC ANGIOGRAPHY	
B31RYZZ	Fluoroscopy of intracranial arteries using other contrast

HOSPITAL INPATIENT PAYMENT
MS-DRG PAYMENT – *effective October 1, 2019*

MS-DRG[9]	MS-DRG TITLE[9,10]	FY2020 RELATIVE WEIGHT[9]	FY2020 GEOMETRIC MEAN LENGTH OF STAY	FY2020 SUBJECT TO PACT?[9,11]	FY2020 MEDICARE NATIONAL AVERAGE[12]
023	Craniotomy with Major Device Implant/Acute Complex Central Nervous System Principal Diagnosis W MCC	5.6171	7.1	Yes	$35,157
024	Craniotomy with Major Device Implant/Acute Complex Central Nervous System Principal Diagnosis WO MCC	4.0165	4.2	Yes	$25,139

PHYSICIAN PROCEDURE CODING AND RBRVS PAYMENT– *effective January 1, 2020*

CPT® CODE	CODE DESCRIPTION	PROCEDURE DISCOUNTING?	CY2020 MEDICARE RVUS (FACILITY SETTING)	CY2020 MEDICARE NATIONAL AVERAGE (FACILITY SETTING)
MECHANICAL THROMBECTOMY VIA DEVICE SUCH AS THE SOLITAIRE™ X REVASCULARIZATION DEVICE				
61645	Percutaneous arterial transluminal mechanical thrombectomy and/or infusion for thrombolysis, intracranial, any method, including diagnostic angiography, fluoroscopic guidance, catheter placement, and intraprocedural pharmacological thrombolytic injection(s)	N	24.19	$873
Note: Diagnostic angiography is integral and not coded separately when performed in the treated territory, as is the case in this scenario.				
ADMINISTRATION OF THROMBOLYTIC (IV t-PA)				
37195	Thrombolysis, cerebral, by intravenous infusion		contractor priced	
Note: This service is usually performed by the hospital nurse, under physician supervision. The Medicare Administrative Contractor establishes RVUs and any payment to the physician only on a case-by-case basis, generally after review of documentation.				
EVALUATION AND MANAGEMENT				
Physician coding and payment are determined by the evaluation and management services provided to the patient during the inpatient admission.				

SCENARIO #9

A patient arrives in the emergency department of a comprehensive stroke center. Following CT angiography which shows occlusion in the distal basilar artery, the patient is treated with IV t-PA and admitted as an inpatient. Diagnostic angiography is performed of the vertebro-basilar circulation and clot is seen the distal basilar artery. The Solitaire™ X Revascularization device is advanced through the React™ 68 catheter or React™ 71 catheter (as part of the Riptide™ Aspiration System) to the occluded basilar segment. While adjunctive aspiration is being applied via the Riptide™ Aspiration System, the Solitaire™ X Revascularization Device restores blood flow in the basilar artery upon clot retrieval.

ICD-10-CM DIAGNOSIS CODES

CODE	CODE DESCRIPTION
ISCHEMIC STROKE	
I63.02	Cerebral infarction due to thrombosis of basilar artery

HOSPITAL INPATIENT PROCEDURE CODING
ICD-10-PCS PROCEDURE CODES – *effective October 1, 2019*

CODE	CODE DESCRIPTION
THROMBECTOMY WITH THE SOLITAIRE™ X REVASCULARIZATION DEVICE VIA ADJUNCTIVE RIPTIDE™ ASPIRATION SYSTEM	
03CG3Z7	Extirpation of matter from intracranial artery, using stent retriever, percutaneous approach
ADMINSTRATION OF THROMBOLYTIC (IV T-PA)	
3E03317	Introduction of other thrombolytic into peripheral vein, percutaneous approach
DIAGNOSTIC ANGIOGRAPHY	
B31RYZZ	Fluoroscopy of intracranial arteries using other contrast

HOSPITAL INPATIENT PAYMENT
MS-DRG PAYMENT – *effective October 1, 2019*

MS-DRG[9]	MS-DRG TITLE[9,10]	FY2020 RELATIVE WEIGHT[9]	FY2020 GEOMETRIC MEAN LENGTH OF STAY	FY2020 SUBJECT TO PACT?[9,11]	FY2020 MEDICARE NATIONAL AVERAGE[12]
023	Craniotomy with Major Device Implant/Acute Complex Central Nervous System Principal Diagnosis W MCC	5.6171	7.1	Yes	$35,157
024	Craniotomy with Major Device Implant/Acute Complex Central Nervous System Principal Diagnosis WO MCC	4.0165	4.2	Yes	$25,139

PHYSICIAN PROCEDURE CODING AND RBRVS PAYMENT– *effective January 1, 2020*

CPT® CODE	CODE DESCRIPTION	PROCEDURE DISCOUNTING?	CY2019 MEDICARE RVUS (FACILITY SETTING)	CY2019 MEDICARE NATIONAL AVERAGE (FACILITY SETTING)
THROMBECTOMY WITH THE SOLITAIRE™ X REVASCULARIZATION DEVICE VIA ADJUNCTIVE RIPTIDE™ ASPIRATION SYSTEM				
61645	Percutaneous arterial transluminal mechanical thrombectomy and/or infusion for thrombolysis, intracranial, any method, including diagnostic angiography, fluoroscopic guidance, catheter placement, and intraprocedural pharmacological thrombolytic injection(s)	N	24.19	$873
Note: Diagnostic angiography is integral and not coded separately when performed in the treated territory, as is the case in this scenario.				
ADMINISTRATION OF THROMBOLYTIC (IV t-PA)				
37195	Thrombolysis, cerebral, by intravenous infusion		contractor priced	
Note: This service is usually performed by the hospital nurse, under physician supervision. The Medicare Administrative Contractor establishes RVUs and any payment to the physician only on a case-by-case basis, generally after review of documentation.				
EVALUATION AND MANAGEMENT				
Physician coding and payment are determined by the evaluation and management services provided to the patient during the inpatient admission.				

REFERENCES

1. ICD-10-CM: Department of Health and Human Services, Centers for Disease Control and Prevention. International Classification of Diseases, 10th Revision, Clinical Modification (ICD-10-CM). http://www.cdc.gov/nchs/icd/icd10cm.htm. Updated October 1, 2020.
2. For the I63.-- codes for ischemic stroke, note that the first digit is the letter "I", not the number "1".
3. ICD-10-CM code Z92.82 is used to indicate the history for a patient who received IV t-PA at one facility and has been transferred to another facility. The code is assigned by the receiving hospital and is always used as an additional diagnosis (not primary). See "code first" note on code Z92.82 in the ICD-10-CM Tabular.
4. ICD-10-PCS: Department of Health and Human Services, Centers for Medicare & Medicaid Services. International Classification of Diseases, 10th Revision, Procedure Coding System (ICD-10-PCS). https://www.cms.gov/Medicare/Coding/ICD10/2020-ICD-10-PCS.html . Updated October 1, 2019.
5. See Coding Clinic 4th Q 2018, p.47.
6. Per ICD-10-PCS indexing, C-Extirpation is used for thrombectomy.
7. Per the ICD-10-PCS Body Part Key, G-Intracranial Artery includes the basilar artery, intracranial portion of the internal carotid artery, and middle cerebral artery, as well as the anterior cerebral artery and posterior cerebral artery. There are other body part values for internal carotid artery but these are not shown because they represent the extracranial portion of the internal carotid artery. See also Coding Clinic, 1st Q 2016, p.19.
8. Fifth character Y-Other Contrast can be used for iso-osmolar contrast, eg, Visipaque, per Coding Clinic 3rd Q 2016, p.36.
9. Centers for Medicare & Medicaid Services. Medicare Program: Hospital Inpatient Prospective Payment Systems for Acute Care Hospitals and Policy Changes and FY2020 Rates Final Rule 84 Fed. Reg. 42044-42701. https://www.govinfo.gov/content/pkg/FR-2019-08-16/pdf/2019-16762.pdf . Published August 16, 2019. Correction Notice 84 Fed. Reg. 53603-53630 https://www.govinfo.gov/content/pkg/FR-2019-10-08/pdf/2019-21865.pdf . Published October 8, 2019.
10. W MCC in MS-DRG titles refers to secondary diagnosis codes that are designated as major complications or comorbidities. MS-DRGs W MCC have at least one major secondary complication or comorbidity. Similarly, W CC in MS-DRG titles refers to secondary diagnosis codes designated as other (non-major) complications or comorbidities, and MS-DRGs W CC have at least one other (non-major) secondary complication or comorbidity. MS-DRGs WO CC/MCCs have no secondary diagnoses that are designated as complications or comorbidities, major or otherwise. Note that some secondary diagnoses are only designated as CCs or MCCs when the conditions were present on admission, and do not count as CCs or MCCs when the conditions are acquired in the hospital during the stay.
11. Post-Acute Care Transfer (PACT) status refers to selected DRGs in which payment to the hospital may be reduced when the patient is discharged by being transferred out. The DRGs impacted are those marked "Yes" and the patient must be transferred out before the geometric mean length of stay to certain post-acute care providers, including rehabilitation hospitals, long term care hospitals, skilled nursing facilities, hospice, or to home under the care of a home health agency. When these conditions are met, the DRG payment is converted to a per diem and payment is made as double the per diem rate for the first day plus the per diem rate for each remaining day up to the full DRG payment.
12. Payment is based on the average standardized operating amount ($5,796.63) plus the capital standard amount ($462.33). Centers for Medicare & Medicaid Services. Medicare Program: Hospital Inpatient Prospective Payment Systems for Acute Care Hospitals and Policy Changes and FY2020 Rates Final Rule 84 Fed Reg 42651-42652 https://www.govinfo.gov/content/pkg/FR-2019-08-16/pdf/2019-16762.pdf. Published August 16, 2019. Correction Notice 84 Fed. Reg. 53613-53614. https://www.govinfo.gov/content/pkg/FR-2019-10-08/pdf/2019-21865.pdf . Published October 8, 2019. The payment rate shown is the standardized amount for facilities with a wage index greater than one. The average standard amounts shown also assume facilities receive the full quality update. The payment will also be adjusted by the Wage Index for specific geographic locality. Therefore, payment for a specific hospital will vary from the stated Medicare national average payment levels shown. Also note that any applicable coinsurance, deductible, and other amounts that are patient obligations are included in the national average payment amount shown.
13. All ischemic stroke codes are classified as "acute complex central nervous system" diagnoses in DRG logic.
14. CPT copyright 2019 American Medical Association. All rights reserved. CPT® is a registered trademark of the American Medical Association. Applicable FARS/DFARS restrictions apply to government use. Fee schedules, relative value, conversion factors and/or related components are not assigned by the AMA, are not part of CPT, and the AMA is not recommending their use. The AMA does not directly or indirectly practice medicine or dispense medical services. The AMA assumes no liability for data contained or not contained herein.
15. Centers for Medicare & Medicaid Services. Medicare Program; CY2020 Revisions to Payment Policies Under the Physician Fee Schedule and Other Revisions to Part B Policies Final Rule; 84 Fed. Reg. 62568-63563. https://www.govinfo.gov/content/pkg/FR-2019-11-15/pdf/2019-24086.pdf . Published November 15, 2019.
16. For codes marked "Yes", multiple procedure discounting indicates that when a procedure code is reported on the same day as another higher-weighted procedure code, the highest-weighted code is paid at 100% of the fee schedule amount and additional codes are paid at 50% of the fee schedule amount. Procedure codes marked "No" are always paid at 100% of the fee schedule amount regardless of whether they are submitted with other procedure codes. See also the current release of the PFS Relative Value File at http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeeSched/PFS-Relative-Value-Files.html.
17. The total RVU as shown here is the sum of three components: physician work RVU, practice expense RVU, and malpractice RVU. RVUs and the Medicare National Average are shown for the facility setting only because Solitaire™ X stent retriever thrombectomy and Riptide™ aspiration thrombectomy for ischemic stroke are always performed in the hospital, rather than the non-facility (physician office) setting.
18. Medicare national average payment is determined by multiplying the sum of the three RVUs by the conversion factor. The conversion factor for CY 2020 is $36.0896 per 84 Fed. Reg. 63152. https://www.govinfo.gov/content/pkg/FR-2019-11-15/pdf/2019-24086.pdf . Published November 15, 2019. See also the current release of the PFS Relative Value File at http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeeSched/PFS-Relative-Value-Files.html. Final payment to the physician is adjusted by the Geographic Practice Cost Indices (GPCI). Also note that any applicable coinsurance, deductible, and other amounts that are patient obligations are included in the payment amount shown.
19. See CPT manual instructions (Surgery section, Nervous System, Endovascular Therapy). See also CPT Assistant September 21019, p.6, for completion angiography.

Solitaire™ X Revascularization Device

INDICATIONS

1. The Solitaire™ X Revascularization Device is indicated for use to restore blood flow in the neurovasculature by removing thrombus for the treatment of acute ischemic stroke to reduce disability in patients with a persistent, proximal anterior circulation, large vessel occlusion, and smaller core infarcts who have first received intravenous tissue plasminogen activator (IV t-PA). Endovascular therapy with the device should be started within 6 hours of symptom onset.
2. The Solitaire™ X Revascularization Device is indicated to restore blood flow by removing thrombus from a large intracranial vessel in patients experiencing ischemic stroke within 8 hours of symptom onset. Patients who are ineligible for IV t-PA or who fail IV t-PA therapy are candidates for treatment.
3. The Solitaire™ X Revascularization Device is indicated for use to restore blood flow in the neurovasculature by removing thrombus for the treatment of acute ischemic stroke to reduce disability in patients with a persistent, proximal anterior circulation, large vessel occlusion of the internal carotid artery (ICA) or middle cerebral artery (MCA)-M1 segments with smaller core infarcts (<70 cc by CTA or MRA, <25 cc by MR-DWI). Endovascular therapy with the device should start within 6-16 hours of time last seen well in patients who are ineligible for intravenous tissue plasminogen activator (IV t-PA) or who fail IV t-PA therapy.

PRECAUTIONS

- The Solitaire™ X Revascularization Device should only be used by physician strained in interventional neuroradiology and treatment of ischemic stroke.
- Carefully inspect the sterile package and the Solitaire™ X Revascularization Device prior to use to verify that neither has been damaged during shipment. Do not use kinked or damaged components.
- The Solitaire™ X Revascularization Device is not to be used after the expiration date imprinted on the product label.
- Refer to the appropriate intravenous tissue plasminogen activator (IV t-PA) manufacturer labeling for indications, contraindications, warnings, precautions, and instructions for use.

± Operators should take all necessary precautions to limit X-ray radiation doses to patients and themselves by using sufficient shielding, reducing fluoroscopy times, and modifying X-ray technical factors whenever possible.

- Initiate mechanical thrombectomy treatment as soon as possible.
- For indication 3, endovascular therapy with the device should be started within 16 hours of symptom onset.
- For indication 3, users should validate their imaging analysis techniques to ensure robust and consistent results for assessing core infarct size.

CONTRAINDICATIONS

Use of the Solitaire™ X Revascularization Device is contraindicated under these circumstances.

- Patients with known hypersensitivity to nickel-titanium.
- Patients with stenosis and/or pre-existing stent proximal to the thrombus site that may preclude safe recovery of the Solitaire™ X Revascularization Device.
- Patients with angiographic evidence of carotid dissection.

WARNINGS – ALL INDICATIONS

- The appropriate anti-platelet and anti-coagulation therapy should be administered in accordance with standard medical practice.
- Administer IV t-PA as soon as possible for all patients who are indicated to receive the drug. Do not cause delays in this therapy.
  - Per IV t-PA manufacturer labeling, IV t-PA should be administered within 3 hours of stroke symptom onset (IV t-PA use beyond 3 hours is not approved in the United States).
- Do not torque the Solitaire™ X Revascularization Device.
- For vessel safety, do not perform more than three recovery attempts in the same vessel using Solitaire™ X Revascularization Devices.
- For device safety, do not use each Solitaire™ X Revascularization Device for more than three flow restoration recoveries.
- For each new Solitaire™ X Revascularization Device, use a new microcatheter.
- Solitaire™ X Revascularization Device does not allow for electrolytic detachment.
- To prevent device separation:
  - Do not oversize device
  - Do not recover (i.e. pull back) the device when encountering excessive resistance. Instead, resheath the device with the microcatheter and then, remove the entire system under aspiration. If resistance is encountered during resheathing, discontinue and remove the entire system under aspiration.
  - Do not treat patients with known stenosis proximal to the thrombus site.
- This device is supplied STERILE for single use only. Do not reprocess or re-sterilize. Reprocessing and re-sterilization increase the risks of patient infection and compromised device performance.
- If excessive resistance is encountered during the delivery of the Solitaire™ X Revascularization Device, discontinue the delivery and identify the cause of the resistance. Advancement of the Solitaire™ X Revascularizaton Device against resistance may result in device damage and/or patient injury.
- If excessive resistance is encountered during recovery of the Solitaire™ X Revascularization Device, discontinue the recovery and identify the cause of the resistance.
- Advancing the microcatheter while the device is engaged in clot may lead to embolization of debris.
- Do not advance the microcatheter against any resistance.
- Do not reposition more than two times.

WARNINGS – INDICATION 1&3 ONLY

- The safety and effectiveness has not been established for the Solitaire™ X device to reduce disability in patients with the following:
  - Posterior circulation occlusions
  - More distal occlusions in the anterior circulation
  - Large core infarct (ASPECTS ≤7)

The Riptide™ Aspiration System is intended for use in the revascularization of patients with acute ischemic stroke secondary to intracranial large vessel occlusive disease (within the internal carotid, middle cerebral – M1 and M2 segments, basilar, and vertebral arteries) within 8 hours of symptom onset. Patients who are ineligible for intravenous tissue plasminogen activator (IV t-PA) or who fail IV t-PA therapy are candidates for treatment.

The React™ 68 Catheter and React™ 71 Catheter are indicated for the introduction of interventional devices into the peripheral and neurovasculature.

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