ICD-10 Roundtable 134

July 26th, 2021

Ultrasonic Catheter-Assisted Thrombolysis

New fragmentation tables

ICD-10-CM/PCS Coding Clinic, Fourth Quarter ICD-10 2020 Pages: 45-52 Effective with discharges: October 1, 2020

New Fragmentation Tables

A large number of changes have been made resulting in 116 new codes to fully describe intravascular ultrasound assisted thrombolysis procedures with tissue plasminogen activator (tPA) as well as peripheral intravascular lithotripsy. Both procedures are classified to the root operation Fragmentation: Breaking solid matter in a body part into pieces. The change consists of adding new body part values to existing table Heart and Great Vessels, Fragmentation (02F), creation of four new tables with the root operation Fragmentation for the body systems Upper Arteries (03F), Lower Arteries (04F), Upper Veins (05F) and Lower Veins (06F), and creation of the Qualifier Ultrasonic, for all of these tables. The changes are illustrated in more detail below.

In table 02F, Heart and Great Vessels, Fragmentation, body part values have been added as noted below, along with the qualifier value Ultrasonic

Body Part	Approach	Device	Qualifier
P Pulmonary Trunk **Q** Pulmonary Artery, Right **R** Pulmonary Artery, Left **S** Pulmonary Vein, Right **T** Pulmonary Vein, Left	**3** Percutaneous	**Z** No Device	**0** Ultrasonic **Z** No Qualifier

New table 03F, Upper Arteries, Fragmentation, was created with the following body part values below, along with the qualifier value Ultrasonic

Body Part	Approach	Device	Qualifier
2 Innominate Artery 3 Subclavian Artery, Right 4 Subclavian Artery, Left 5 Axillary Artery, Right 6 Axillary Artery, Left 7 Brachial Artery, Right 8 Brachial Artery, Left 9 Ulnar Artery, Right A Ulnar Artery, Left B Radial Artery, Right C Radial Artery, Left Y Upper Artery	3 Percutaneous	Z No Device	0 Ultrasonic Z No Qualifier

New table 04F, Lower Arteries, Fragmentation, was created with the following body part values below, along with the qualifier value Ultrasonic

Body Part	Approach	Device	Qualifier
C Common Iliac Artery, Right D Common Iliac Artery, Left E Internal Iliac Artery, Right F Internal Iliac Artery, Left H External Iliac Artery, Right J External Iliac Artery, Left K Femoral Artery, Right L Femoral Artery, Left M Popliteal Artery, Right N Popliteal Artery, Left P Anterior Tibial Artery, Right Q Anterior Tibial Artery, Left R Posterior Tibial Artery, Right S Posterior Tibial Artery, Left T Peroneal Artery, Right U Peroneal Artery, Left Y Lower Artery	3 Percutaneous	Z No Device	0 Ultrasonic Z No Qualifier

New table 05F, Upper Veins, Fragmentation, was created with the following body part values below, along with the qualifier value Ultrasonic.

Body Part	Approach	Device	Qualifier
3 Innominate Vein, Right 4 Innominate Vein, Left 5 Subclavian Vein, Right 6 Subclavian Vein, Left 7 Axillary Vein, Right 8 Axillary Vein, Left 9 Brachial Vein, Right A Brachial Vein, Left B Basilic Vein, Right C Basilic Vein, Left D Cephalic Vein, Right F Cephalic Vein, Left Y Upper Vein	3 Percutaneous	Z No Device	0 Ultrasonic Z No Qualifier

New table 06F, Lower Veins, Fragmentation, was created with the following body part values below, along with the qualifier value Ultrasonic.

Body Part	Approach	Device	Qualifier
C Common Iliac Vein, Right **D** Common Iliac Vein, Left **F** External Iliac Vein, Right **G** External Iliac Vein, Left **H** Hypogastric Vein, Right **J** Hypogastric Vein, Left **M** Femoral Vein, Right **N** Femoral Vein, Left **P** Saphenous Vein, Right **Q** Saphenous Vein, Left **Y** Lower Vein	**3** Percutaneous	**Z** No Device	**0** Ultrasonic **Z** No Qualifier

Intravascular Ultrasound Assisted Thrombolysis

Conventional catheter-directed thrombolysis generally uses a multiside hole catheter placed adjacent to the thrombus. Thrombolytics are then delivered directly to the thrombus via the catheter. Newer technology utilizes pulses of ultrasonic energy to temporarily make the fibrin in the thrombus more porous and increase fluid flow within the thrombus. High frequency, low-intensity ultrasonic waves create a pressure gradient that drives the thrombolytic into the thrombus and keeps it in close proximity to the binding sites. An example of this technology is the EkoSonic® Endovascular System (EKOS™ system). The most common indication for ultrasound assisted thrombolysis is the treatment of pulmonary embolism. However, this therapy is also indicated to treat deep venous thrombosis and peripheral arterial occlusion.

Please note that facilities may choose to report the administration of the thrombolytic agent separately using the appropriate codes noted below:

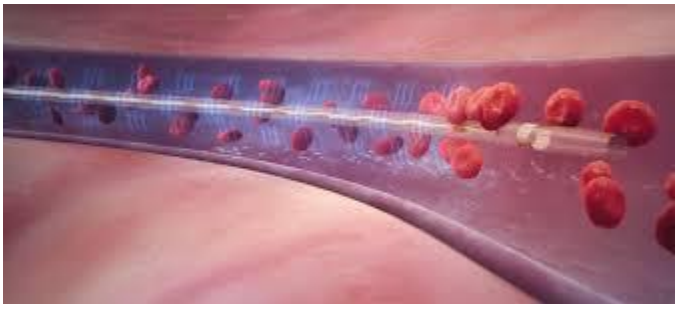
3E06317 Introduction of other thrombolytic into central artery, percutaneous approach, or

3E05317 Introduction of other thrombolytic into peripheral artery, percutaneous approach, or

3E04317 Introduction of other thrombolytic into central vein, percutaneous approach, or

3E03317 Introduction of other thrombolytic into peripheral vein, percutaneous approach.

https://www.dicardiology.com/videos/video-how-ekos-thrombolytic-technology-works-dissolve-clots



The EKOS™ system, employs ultrasound to assist thrombolysis. The ultrasound does not itself dissolve the thrombus, but pulses of ultrasonic energy temporarily make the fibrin in the thrombus more porous and increase fluid flow within the thrombus. High frequency, low-intensity ultrasonic waves create a pressure gradient that drives the thrombolytic into the thrombus to dissolve the clot

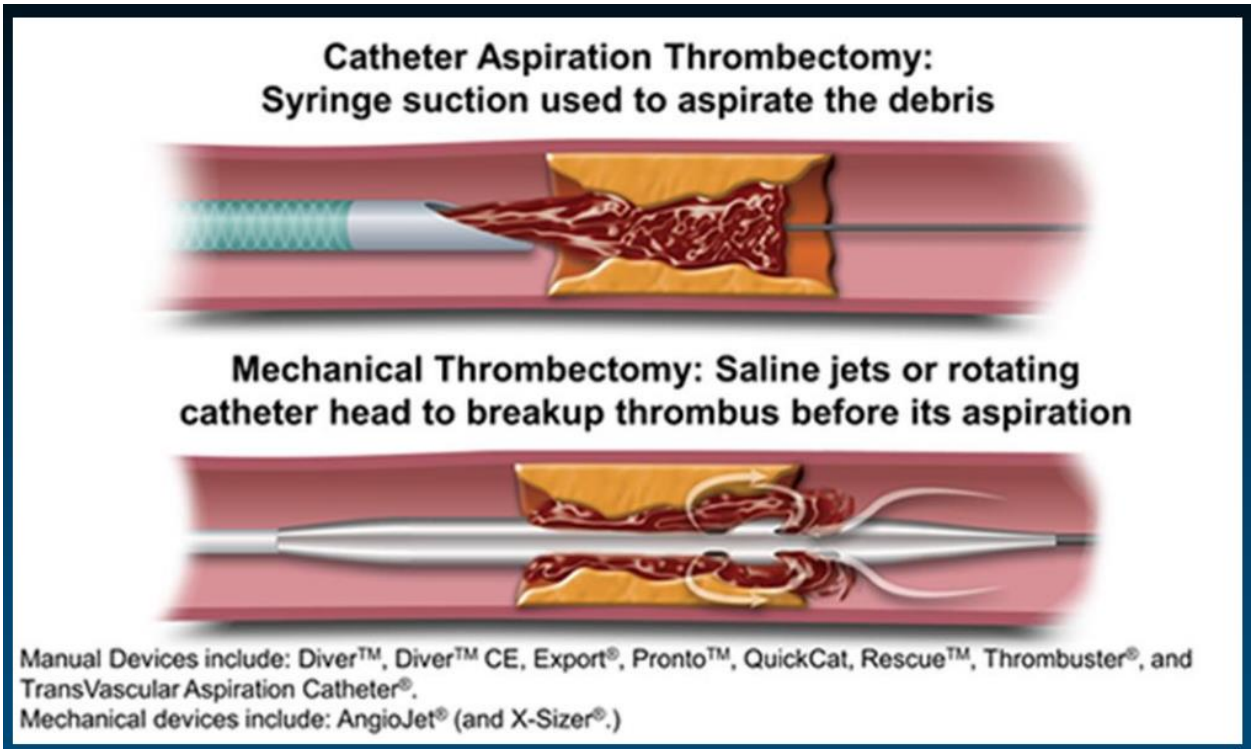
Direct Aspiration Thrombectomy and Mechanical thrombectomy

Example: Mechanical (Pharmacomechanical thrombolysis, Extirpation) vs. EKOS (Intravascular Ultrasound Assisted Thrombolysis, Fragmentation)

Direct aspiration thrombectomy is also known as suction thrombectomy. Primary aspiration of the thrombus utilizes a large-bore catheter under angiographic guidance and assessment to directly engage and remove the clot. The procedural steps are repeated as necessary to ensure the artery has been sufficiently reopened and revascularized

Mechanical Fragmentation with aspiration-ClotRetriever, Arrow-Trerotola
Rheolytic thrombectomy with aspiration - The mechanism of rheolytic thrombectomy is a high-pressure saline jet in conjunction with aspiration **(**Angiojet)
Aspiration Thrombectomy-Indigo Pneumbra

https://evtoday.com/device-guide/us/mechanical-thrombectomythrombolysis



https://www.bostonscientific.com/en-US/products/thrombectomy-systems/angiojet-thrombectomy-system.html

https://www.youtube.com/watch?v=4fgyRzvJERU

Previous Advice

Ultrasound accelerated thrombolysis

ICD-10-CM/PCS Coding Clinic, Fourth Quarter ICD-10 2014 Pages: 19-20 Effective with discharges: December 31, 2014

Question:
The patient underwent ultrasound accelerated thrombolysis of the pulmonary artery (PA). What is the appropriate ICD-10-PCS code for ultrasound accelerated thrombolysis of the PA? Should the root operation "Insertion" be coded and is the ultrasound and accelerated thrombolysis procedure separately coded?

Answer:

Ultrasound accelerated thrombolysis uses specialized equipment to perform the procedure, but no device is left behind after the surgery. Delivery of ultrasonic waves via catheter is not considered

insertion of a device in PCS terms. Therefore, the root operation "Insertion" is not appropriate, since "Insertion" is only coded when a device is left behind. Assign the appropriate code from ICD-10-PCS table 6A7, Extracorporeal therapies, physiological systems, ultrasound therapy, for the therapeutic ultrasound. Although this table is titled "extracorporeal therapies" and this type of ultrasound was not technically extracorporeal, these are the only therapeutic ultrasound codes available at this time.

Additionally, assign the appropriate code from ICD- 10-PCS table 3E0, Administration, Physiological systems and anatomical regions, introduction, to identify infusion of the thrombolytic therapy. The pulmonary artery is classified as a central artery. Assign the following ICD-10-PCS codes for the ultrasound accelerated thrombolysis of the pulmonary artery:

6A750Z7	Ultrasound therapy of other vessels, single
3E06317	Introduction of other thrombolytic into central artery, percutaneous approach

Comment:
Please note these old codes did not impact DRG but the fragmentation procedures will impact DRG assignment. DVT as the PDX will result in 250-251 PERCUTANEOUS CARDIOVASCULAR PROCEDURES WITHOUT CORONARY ARTERY STENT WITH/WITHOUT MCC

CASE STUDY

Diagnosis: Bilateral Pulmonary embolisms with acute cor pulmonale

Procedure: Insertion of EKOS thrombolytic catheter

The patient was placed supine on the angio table, and the right neck was prepped and draped and all elements of maximal sterile barrier technique including cap and mask and sterile gowns and sterile gloves and a large sterile sheet and meticulous hand hygiene, and 2 % chlorhexidine for cutaneous antisepsis was followed.

Utilizing ultrasound guidance, the right internal jugular vein was accessed using a micropuncture set. Utilizing ultrasound guidance, a second site right external jugular vein access was similarly performed.

Both access sites were exchanged for 6 French 10 cm vascular sheaths over a Bentson wire. An ultrasound image of the access site was saved to PACS.

Through one of the sheaths, a 5 French Cobra catheter was then used to access the main pulmonary artery. This was exchanged for a Omni flush catheter over wire. Contrast injection

confirmed position. A pulmonary artery pressure was obtained from a transducer. Digital subtraction arteriography of the left pulmonary artery was performed. The flush catheter was exchanged for an EKOS 12 cm infusion length catheter, the tip of which was seated in the left lower lobe.

Through the other sheath, a 5 French Cobra catheter was used to access the main pulmonary artery. This was exchanged for a Omni flush catheter over wire. Contrast injection confirmed position. Digital subtraction arteriography of the right pulmonary artery was performed. The flush catheter was exchanged for an an EKOS 12 cm infusion length catheter, the tip of which was seated in the right upper lobe.

The infusion catheters and vascular sheath was sutured in place and a sterile dressing was applied. The patient tolerated the procedure well without immediate complication

PLAN:

Transfer to intensive care unit for observation during tPA infusion of a total of 1 mg per hour (0.5 mg split dose) via the EKOS catheters

Procedure Codes:

Section	**0**	Medical and Surgical
Body System	**2**	Heart and Great Vessels
Operation	**F**	Fragmentation: Breaking solid matter in a body part into pieces

Body Part	*Approach*	*Device*	*Qualifier*
N Pericardium	**0** Open **3** Percutaneous **4** Percutaneous Endoscopic **X** External	**Z** No Device	**Z** No Qualifier
P Pulmonary Trunk **Q** Pulmonary Artery, Right **R** Pulmonary Artery, Left **S** Pulmonary Vein, Right **T** Pulmonary Vein, Left	**3** Percutaneous	**Z** No Device	**0** Ultrasonic **Z** No Qualifier

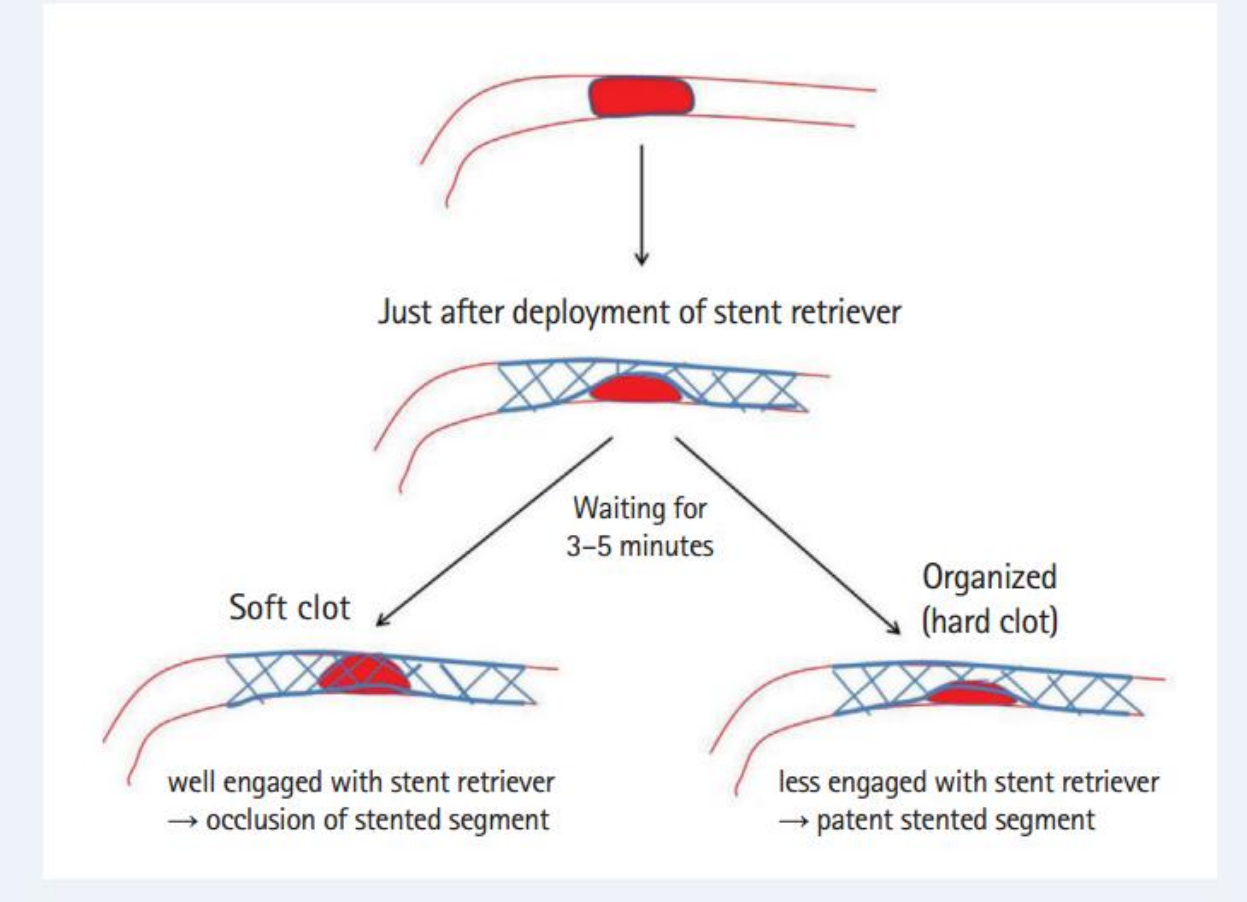
02FR3Z0 [Fragmentation of **Left** Pulmonary Artery, Percutaneous Approach, Ultrasonic]
02FQ3Z0 [Fragmentation of **Right** Pulmonary Artery, Percutaneous Approach, Ultrasonic]

OPTIONAL PER FACILITY P&P
3E06317 [Introduction of Other Thrombolytic into Central Artery, Percutaneous Approach]

MS-DRG 168 OTHER RESPIRATORY SYSTEM O.R. PROCEDURES WITHOUT CC/MCC

Other related Topics

Endovascular Thrombectomy with Stent Retriever



New qualifier values

ICD-10-CM/PCS Coding Clinic, Fourth Quarter ICD-10 2018 Pages: 45-49 Effective with discharges: October 1, 2018

In code table 03C, Upper Arteries, Extirpation, the qualifier value Stent Retriever was added for the Intracranial and Extracranial Arteries body part values shown below

Endovascular Thrombectomy with Stent Retriever

In code table 03C, Upper Arteries, Extirpation, the qualifier value Stent Retriever was added for the Intracranial and Extracranial Arteries body part values shown below.

Body Part	Qualifier
G Intracranial Artery H Common Carotid Artery, Right J Common Carotid Artery, Left K Internal Carotid Artery, Right L Internal Carotid Artery, Left M External Carotid Artery, Right N External Carotid Artery, Left P Vertebral Artery, Right Q Vertebral Artery, Left	7 Stent Retriever

The new codes will help distinguish endovascular thrombectomy using stent retriever from other

interventional extirpation techniques used to treat occlusions and hyper-dense thrombi where tPA may not be effective in the treatment of ischemic strokes. The new Stent Retriever ICD-10-PCS qualifier is assigned whenever a stent retriever is used for a thrombectomy, either with local aspiration as an adjunctive part of the technique, or when a stent retriever is used together with direct aspiration.

Stent retriever thrombectomy utilizes a specialized catheter under angiographic guidance and assessment to advance through the vasculature into and through the thrombus. The stent component expands to engage the clot and trap the thrombus. The catheter is then slowly withdrawn while local aspiration is applied to help retain the clot within the stent. The procedural steps are repeated as necessary to ensure the artery has been sufficiently reopened and revascularized. The thrombectomy instrument used to retrieve the clot may be referred to as a "stent" because of its appearance, but it differs from ordinary stents used to dilate a vessel in that no device remains in the body after the procedure is completed. Instead, this stent is used to trap and remove thrombi.

Direct aspiration thrombectomy is also known as suction thrombectomy. Primary aspiration of the thrombus utilizes a large-bore catheter under angiographic guidance and assessment to directly engage and remove the clot. The procedural steps are repeated as necessary to ensure the artery has been sufficiently reopened and revascularized. In contrast to stent retriever thrombectomy, no stent is used to engage or remove the clot. The existing qualifier Z, No Qualifier, is assigned when direct aspiration alone is performed as the primary technique.

Combined stent retriever/aspiration thrombectomy may be performed together during the same operative episode in some instances to extirpate the thrombus. This may be accomplished by placing the stent retriever adjacent to the aspiration catheter, or by passing the stent retriever through the aspiration catheter. The combination of both techniques may be used to reduce thrombus fragmentation which can lead to distal embolic complication. In other instances, if direct aspiration thrombectomy is not sufficiently effective in revascularizing the vessel, it may be immediately followed by a stent retriever thrombectomy during the same operative episode.

Only one Extirpation code should be assigned. The new qualifier value Stent retriever should be assigned whenever a stent retriever is used for thrombectomy, either with local aspiration as an adjunctive part of the technique or when a stent retriever is used together with direct aspiration. The existing qualifier Z, No Qualifier, would be assigned whenever direct aspiration alone is performed as the primary technique.

Intravascular Lithotripsy

Intravascular lithotripsy is used alone or with stent placement to treat plaque in the arteries. Shockwave lithotripsy is a new technology that uses a traditional balloon catheter with multiple mounted emitters to provide pulsatile sonic energy to fragment calcified calcifications within the vessels. The procedure is performed by delivering an intravascular lithotripsy (IVL) catheter across a calcified lesion over a wire and the integrated balloon is expanded. An electrical discharge from the emitters vaporizes the fluid within the balloon, creating a rapidly expanding and collapsing bubble that

generates sonic pressure waves. The waves travel through soft vascular tissue, selectively cracking vessel wall intimal and medial calcium.

Question:
The patient presented with stenosis of the right external iliac and common femoral arteries and underwent a percutaneous transluminal angioplasty (PTA) with shockwave lithotripsy therapy. During the procedure, a shockwave lithotripsy balloon was inserted and two treatments of shockwaves were delivered. A drug-coated balloon was then inserted and left in place for three minutes. Final angiography revealed excellent results and reduction in stenosis. How is shockwave lithotripsy therapy and drug-coated balloon angioplasty of the external iliac and common femoral arteries coded?

Answer:
Assign the following ICD-10-PCS codes for the angioplasty with shockwave lithotripsy therapy of the right external iliac and common femoral arteries:

047H3Z1	Dilation of right external iliac artery using drug-coated balloon, percutaneous approach
047K3Z1	Dilation of right femoral artery using drug-coated balloon, percutaneous approach
04FH3ZZ	Fragmentation of right external iliac artery, percutaneous approach
04FK3ZZ	Fragmentation of right femoral artery, percutaneous approach.

Question:

A patient was admitted for transfemoral aortic valve replacement (TAVR); however, due to horseshoe calcification at the right common iliac ostium, an intravascular lithotripsy was performed prior to the TAVR to treat the patient's peripheral arterial disease and to allow for sheath placement necessary for the TAVR procedure. During the lithotripsy, a balloon was advanced across the lesion and inflated to a maximum of four atmospheres and 120 pulses were delivered. The balloon was then withdrawn to the origin of the external iliac and 60 additional pulses were delivered. Follow-up angiography revealed an excellent angiographic result without dissection. How is shockwave lithotripsy therapy of the right common and external iliac arteries coded?

Answer:

Assign the following ICD-10-PCS codes for the intravascular shockwave lithotripsy of the right common and external iliac arteries

04FC3ZZ	Fragmentation of right common iliac artery, percutaneous approach
04FH3ZZ	Fragmentation of right external iliac artery, percutaneous approach.

The objective of the procedure is to break up the arterial calcifications. While the procedure involves a

balloon, the purpose of the balloon is to facilitate the energy (pulse) transfer. Dilation codes are not assigned since there was no mention of "dilating the vessel" (or specifically performing a percutaneous transluminal angioplasty). Assign separate codes for the TAVR.

Please note that facilities may choose to report the administration of the thrombolytic agent separately using the appropriate codes noted below:

3E06317	Introduction of other thrombolytic into central artery, percutaneous approach, or
3E05317	Introduction of other thrombolytic into peripheral artery, percutaneous approach, or
3E04317	Introduction of other thrombolytic into central vein, percutaneous approach, or
3E03317	Introduction of other thrombolytic into peripheral vein, percutaneous approach.