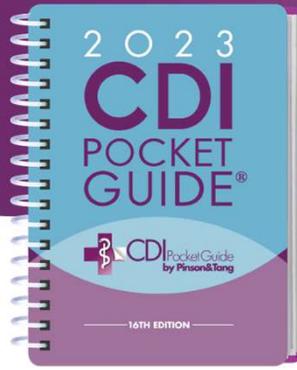


July 27, 2023



## CDI Pocket Guide®

### Deep Vein Thrombosis & Pulmonary Embolism

**Pinson&Tang**

Pinson & Tang | Copyright © 2023

1

## Pinson&Tang

### About Us



#### Richard Pinson

MD, FACP, CCS, CDIP

Dr. Richard Pinson is a physician, educator, administrator, and healthcare consultant. He practiced Internal Medicine and Emergency Medicine in Tennessee for over 20 years having board certification in both.



#### Cynthia Tang

RHIA, CCS, CRC

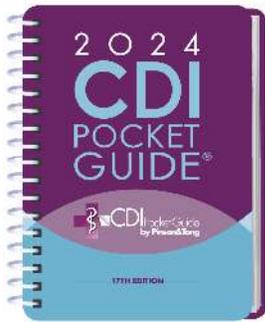
Cynthia brings over 35 years of experience in coding and clinical documentation integrity, and health information management. For over 30 years she has traveled across the country implementing successful and sustainable coding and CDI programs in hundreds of hospitals.



We created the **CDI Pocket Guide®** in 2008 because we wanted to provide this information to all hospitals, large or small. At the time, the only way to receive training in this field was with large-scale, expensive consulting projects. We thought we could bring this pocketful of information with the clinical criteria to identify important diagnoses to any individual who was interested in working in the CDI and coding field. Our **CDI Pocket Guide®** quickly became a best-selling book and an industry standard, and many consider it to be their CDI “bible”.

2

**CDI Pocket Guide®**



**2024  
CDI  
POCKET  
GUIDE®**

CDI Pocket Guide  
by Pinson&Tang

17<sup>th</sup> Edition  
Preorder

**Pinson&Tang**

**CDI Pocket Guide®  
Unbound Edition**



**CDI+  
Mobile  
App**

**CDI for the Clinician®**



**Micro-learning  
modules**

**CDI+MD  
Mobile  
App**



Access to our webinar library

3

## CDI Pocket Guide® Unbound Edition Webinar Library

- Acid/Base Disorders
- Acute Kidney Injury: Calculation and Confirmation
- Adverse Reactions to Drugs/Toxins
- Cause And Effect
- Clinical Validation
- Coagulation Disorders
- Encephalopathy
- HCCs: Impact to Payers & Providers
- Heart Failure
- Kidney Disease: AKI, ATN, and CKD
- Liver Disease and Failure
- Malnutrition
- Myocardial Injury, Ischemia, and Infarction
- Myocardial Ischemia
- Neoplasms
- Patient Safety Indicators & Complications Of Care
- Pneumonia
- Respiratory Failure
- Selecting the Principal Diagnosis
- Sepsis
- Shock
- The Compliant Query
- FY2023 Regulatory & CDI Pocket Guide® Updates - Part 1
- FY2023 Regulatory & CDI Pocket Guide® Updates - Part 2

**Pinson&Tang**

Pinson&Tang | Copyright © 2023

4

4

# Deep Vein Thrombosis & Pulmonary Embolism

## Pinson&Tang

### Agenda

2023 CDI Pocket Guide®  
Pages 125-126



DVT and PE: Symptoms, Causes and Risk Factors  
Diagnostic Criteria and Treatment



Acute, Chronic, and History of Hypercoagulable State  
Coding Clinics



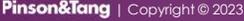
Case Studies  
Q&A

5

## ICD-10 Codes



Code	Code Description	MCC/CC	HCC
I26.09, I26.99	Pulmonary embolism with or without acute cor pulmonale (septic, saddle, single subsegmental, multiple subsegmental)	MCC	107
I27.82	Chronic pulmonary embolism	CC	107
I82.40-	Acute embolism and thrombosis of unspecified deep veins (lower extremity)	CC	108
I82.50-	Chronic embolism and thrombosis of unspecified deep veins (lower extremity)	CC	108
Z86.711	Personal history of pulmonary embolism	--	--
Z86.718	Personal history of other venous thrombosis and embolism	--	--


Copyright © 2023

6

6

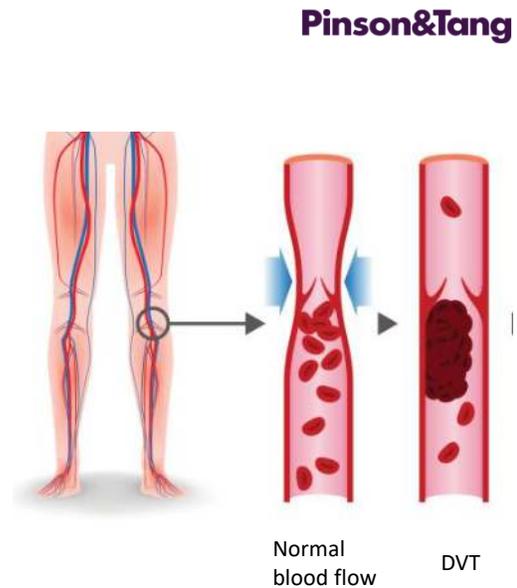
## Venous Thromboembolism

### Deep Vein Thrombosis (DVT)

Venous thromboembolism (VTE) includes both **Deep Vein Thrombosis (DVT)** which is a thrombosis in the deep veins and Pulmonary Embolism (PE) which is an embolism to the lungs and closely related: causes are the same and PE is a complication of DVT.

Most common location for DVT is the lower extremity, i.e., iliac, femoral, popliteal, tibial, but can occur in the vena cava, subclavian, axillary, and renal veins.

**Symptoms:** warmth, edema, pain, and tenderness.



Pinson&Tang | Copyright © 2023

7

7

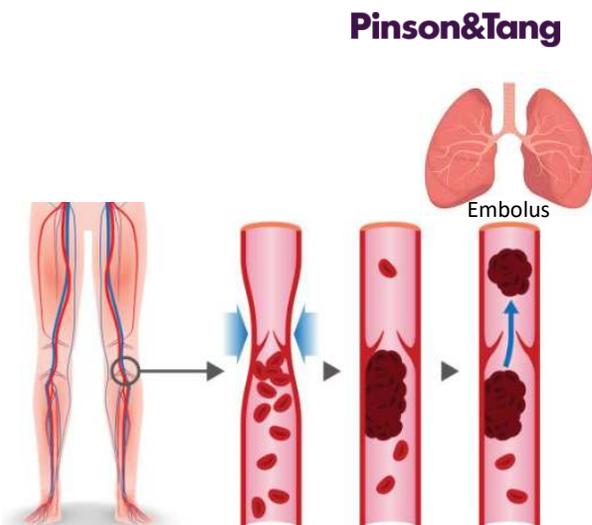
## Venous Thromboembolism

### Pulmonary Embolism (PE)

**Pulmonary embolism** occurs when a DVT, usually originating from the lower extremities, embolizes to the lungs.

Causes are essentially the same as with DVT.

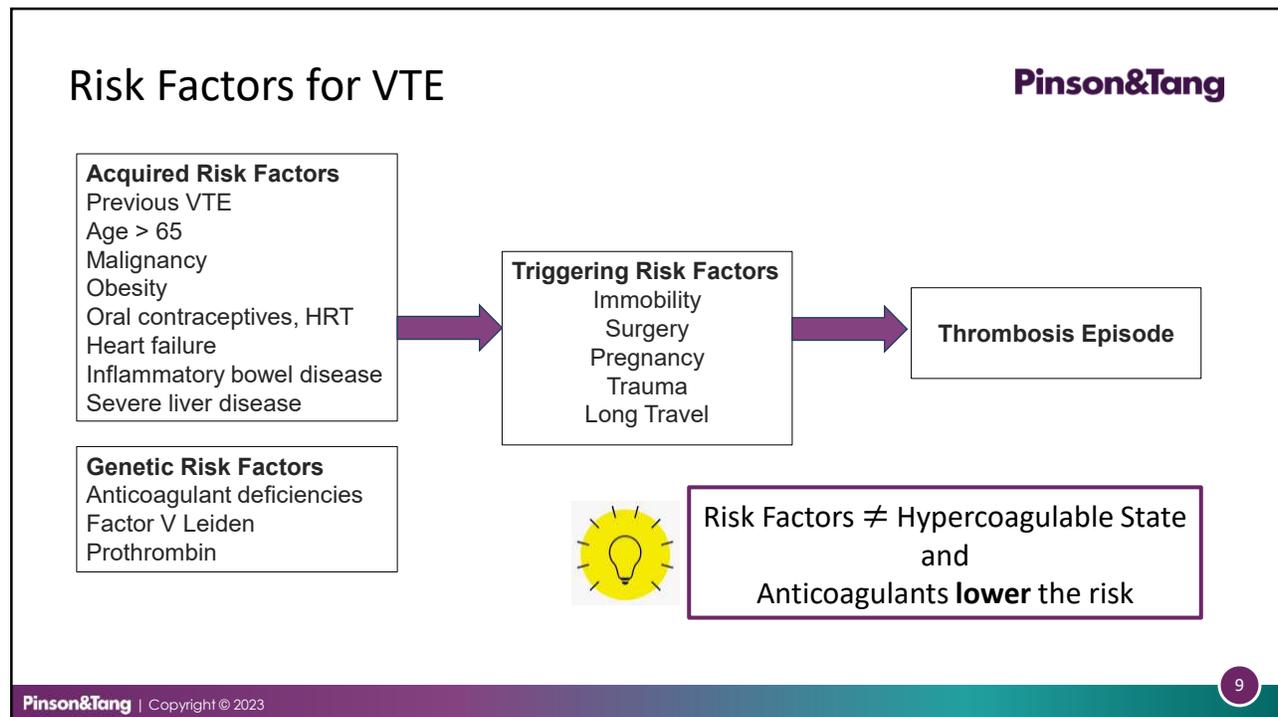
**Symptoms:** shortness of breath, hypoxemia, pleuritic chest pain, syncope.



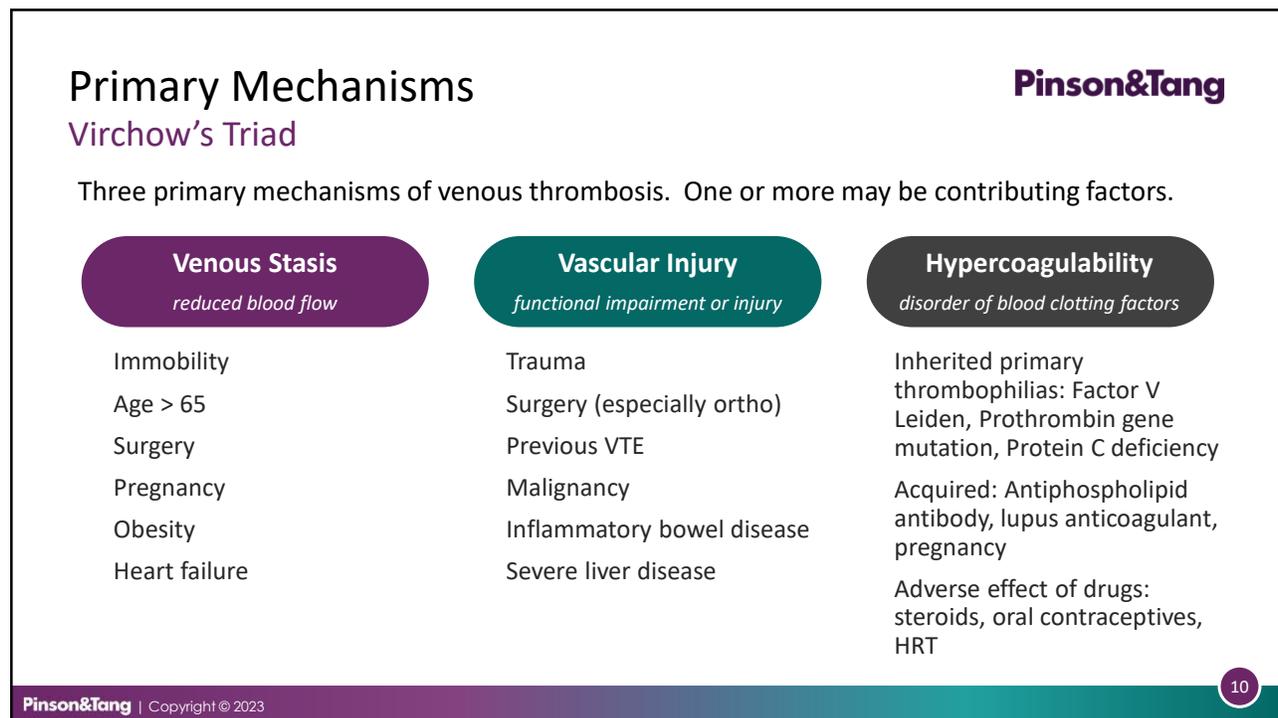
Pinson&Tang | Copyright © 2023

8

8



9



10

## Diagnostic Criteria

Pinson&Tang

### DVT vs. PE

#### Deep Vein Thrombosis

- D-dimer level > 500 ng/mL
- Positive ultrasound

#### Pulmonary Embolus

- D-dimer level > 500 ng/mL
- Positive contrast CT of lung (CTPA)

D-dimer usually done first in ED to rule out DVT or PE.

Pinson&Tang | Copyright © 2023

11

11

## Treatment

Pinson&Tang

#### Acute DVT / PE

Usually treated with Eliquis, Xarelto, Lovenox, or IV heparin for immediate anticoagulation to *prevent* further clot growth.

These medications do not actually dissolve the clots. The acute blood clots in deep veins or pulmonary arteries usually dissolve spontaneously by endogenous processes within a few days, not by Eliquis, Xarelto, Heparin, or Coumadin.

Transition to Eliquis or Xarelto from IV Heparin or continuation of these meds for 3-12 months to prevent recurrent DVT/PE.

#### Chronic DVT / PE

Chronic DVT is a residual clot or fibrosis of a clot that continues to cause deep venous obstruction resulting in edema, pain, or chronic venous ulcers.

Chronic PE is a persistent clot or fibrosis causing blockage in pulmonary arteries and chronic pulmonary hypertension.

Indicators (for both chronic and recurrent):

- Life-long (> 1 year) Eliquis, Xarelto, Coumadin
- Presence of a Greenfield (IVC) filter when anticoagulation is contraindicated or ineffective.

Pinson&Tang | Copyright © 2023

12

12

## Acute, Chronic, History of DVT/PE

Pinson&Tang

DVT and PE are classified as acute or chronic based on how long the blood clot is present.

<b>Acute</b>	<p>Presence of a thrombus (lasting about 14 days).</p> <p>The acute episode of DVT/PE ends when the patient is stabilized, transitioned or maintained on anticoagulants and discharged.</p> <p>A subsequent DVT/PE episode requiring admission (or not) would constitute a recurrent episode of acute DVT or PE.</p>
<b>Chronic</b>	<p>Residual clot or fibrosis of a clot that continues to cause obstruction or blockage with symptoms.</p>
<b>History of</b>	<p>Previous acute episode without any chronic manifestations on anticoagulants &lt; 12 months.</p> <p>If a patient is admitted with a "history of DVT or PE" or "history of <b>recurrent</b> DVT or PE" without evidence of acute or chronic DVT/PE, the correct status is "history of."</p>

Pinson&Tang | Copyright © 2023

13

13

## Coding Clinic 2020 Second Quarter p. 20

Pinson&Tang

**Question:** A 79-year-old patient presents for a follow-up visit for multiple conditions, including personal history of recurrent deep vein thrombosis (DVT) of the lower extremity. The patient was initially anticoagulated with Coumadin but was switched to Xarelto®.

Some coding professionals at our facility feel that a diagnosis of history of recurrent DVT in a patient on anticoagulation therapy should be coded as a chronic DVT. However, other coding professionals believe that history of recurrent DVT without any further specification should be reported with the default code assignment of acute DVT. What is the appropriate code assignment for **personal history of recurrent DVT** of the lower extremity?

**Answer:** Based on the health record documentation, assign codes Z86.718, Personal history of other venous thrombosis and embolism, and Z79.01, Long term (current) use of anticoagulants, for history of recurrent deep vein thrombosis of the lower extremity on long term use of anticoagulant medication. In this case, the patient presented for a follow-up visit and had no evidence of an acute, current or recurrent DVT nor complications from the thrombus. Chronic DVT is a thrombus that is one month to several months old and usually involves symptoms, such as chronic swelling, ulceration, cellulitis, or other complication. Recurrent DVT indicates the condition has occurred more than once. The provider would need to document recurrent or chronic DVT, to code it as such.

### "History of recurrent DVT" on anticoagulants:

When there is no evidence of an acute (current) or chronic DVT, assign code Z86.718, Personal history of venous thrombosis and embolism.

Pinson&Tang | Copyright © 2023

14

14

## Coding Clinic 2008 Third Quarter p. 16

Pinson&Tang

### DVT and Hypercoagulable State

**Question:** We've heard that a patient with deep venous thrombosis can automatically also be assigned a code for hypercoagulable state. Is this correct?

**Answer:** No, the presence of a deep venous thrombosis (DVT) does not imply that a hypercoagulable state exists. DVT can occur without a hypercoagulable state, which is why the documentation needs to be specific.

Code assignment is based on provider documentation. A hypercoagulable state is a condition in which there is an increased tendency for blood clotting and it may be due to a number of conditions.

Even patients with DVT or PE does not mean that a patient has an acquired hypercoagulable state.

DVT/PE is due to one or more of Virchow's triad:

- 1) Venous stasis (afib, immobilization, etc.)
- 2) Endothelial injury (trauma, malignancy, drugs)
- 3) Hypercoagulable state: hereditary, or acquired (pregnancy, oral contraceptives/HRT, steroids)

DVT/PE due to venous stasis or endothelial injury is not a hypercoagulable state.

In addition, many causes of hypercoagulable state are temporary. Once the patient is no longer taking these drugs or no longer pregnant, they do not have an acquired hypercoagulable state.

Pinson&Tang | Copyright © 2023

15

15

## Coding Clinic 2021 Second Quarter p. 8

Pinson&Tang

### Anticoagulant Therapy and Secondary Hypercoagulable State

Coding Clinic advised to assign code D68.69, Other thrombophilia, for a provider diagnosis of "secondary hypercoagulable state."

The case described a 79-year-old with a history of paroxysmal atrial fibrillation on anticoagulant maintenance who is diagnosed with "secondary hypercoagulable state."

*"Secondary hypercoagulable states are acquired disorders of thrombosis due to complex and multifactorial mechanisms. Patients with AF on chronic anticoagulant therapy may have an increased incidence of acquired hypercoagulable state."*

A hypercoagulable state in a patient on chronic anticoagulant therapy for atrial fibrillation would be **rare**, since this is the direct opposite reaction of anticoagulant therapy, which is to prevent hypercoagulopathy (thrombosis).

**Hypo-coagulopathy** is the therapeutic effect of anticoagulant therapy, and abnormal bleeding is a common adverse effect (code D68.32), not hypercoagulopathy.

**DO NOT QUERY** for secondary hypercoagulable state in patients on anticoagulant therapy, unless:

- (1) an actual unexpected thrombosis occurs
- (2) the anticoagulant therapy is discontinued.

Pinson&Tang | Copyright © 2023

16

16

## PSI-12: Perioperative PE/DVT

Pinson&Tang

PSI 12 includes **surgical patients** with pulmonary embolism or proximal deep vein thrombosis that was not present on admission.

### Includes:

Pulmonary embolism or proximal deep vein thrombosis POA = N with surgery

- Acute DVT (I80.401-I82.4Y9)
- Acute pulmonary embolism (I26.02-I26.99, except I26.93)
- Phlebitis and thrombophlebitis (I80.10-I80.299)

### Excludes:

- If present on admission: principal diagnosis or secondary diagnosis POA=Y
- Patient has an acute brain or spinal injury diagnosis POA=Y
- Interruption of vena cava or pulmonary arterial thrombectomy is the only O.R. procedure or occurs before or the same day as first O.R. procedure
- Extracorporeal membrane oxygenation (ECMO)
- "Single subsegmental" PE without acute cor pulmonale (code I26.93)

**CMS Pay for Performance  
Hospital Acquired Condition  
(HAC)  
Penalty Program**

Pinson&Tang | Copyright © 2023

17

17

## PSI-12: Single Subsegmental pulmonary embolism

Pinson&Tang

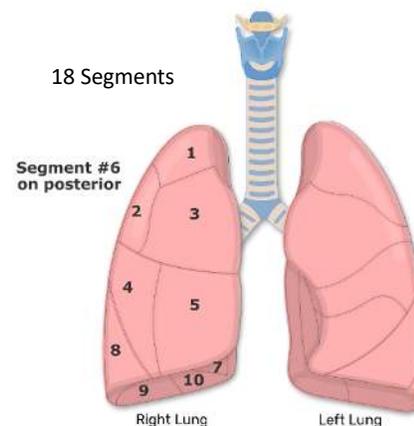
**I26.93**  **Single subsegmental pulmonary embolism without acute cor pulmonale**  
Subsegmental pulmonary embolism NOS

"Single subsegmental" is assigned to code I26.93 and excluded.

"Multiple subsegmental" pulmonary emboli is assigned to I26.94, Multiple subsegmental pulmonary emboli

"Segmental" is assigned to code I26.99, Other specified pulmonary embolism, and are significant.

Each segment of the lobe has multiple subsegments.  
Single subsegmental PE may also be described as SSPE, small SSPE, incidental, or asymptomatic PE and is usually not clinically significant. May or may not be treated with anticoagulants which depends on risk factors and presence of DVT.



Pinson&Tang | Copyright © 2023

18

18

## Coding Clinic: Subsegmental Pulmonary Embolism **Pinson&Tang**

**Coding Clinic 2019** Fourth Quarter, p. 6: New ICD-10 codes were created to identify single subsegmental pulmonary embolism (**I26.93**) and multiple subsegmental pulmonary emboli without acute cor pulmonale (**I26.94**).

An embolus is a blood clot that most commonly originates in the veins of the legs (deep vein thrombosis). The blood clot can dislodge and travel as an embolus to other organs in the body, generally the lungs. A pulmonary embolism is a clot that lodges in the lungs, potentially blocking one or more of the pulmonary arteries and reducing blood flow to a region of the lungs.

**The use of advanced imaging techniques has increased the detection of small subsegmental pulmonary emboli (SSPE) in asymptomatic patients that may not be clinically significant.** These SSPEs are often isolated to distal (subsegmental) branches of the pulmonary artery, without coexisting deep venous thrombosis, and are usually too small to cause any major problems. Previously, subsegmental pulmonary emboli were treated with anticoagulation for months or years. However, it is unknown whether these emboli are in fact an indication for future thromboembolic events, and there is no consistent evidence that patients with SSPE benefit from short- and long-term anticoagulation therapy. The most recent guidelines from the American College of Chest Physicians (ACCP) recommend that patients with isolated SSPE and no proximal DVT undergo surveillance rather than anticoagulation.

**These new codes will enable important clinical differentiation, and will be beneficial for quality measures for hospitals, as well as for research and evaluation of treatment efficacy.**

## Acute Cor Pulmonale (Pulmonary Heart Disease) **Pinson&Tang**

**Pulmonary hypertension** is elevated pulmonary artery blood pressure

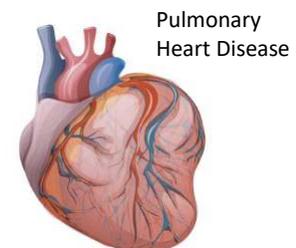
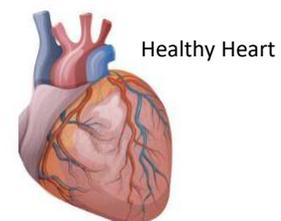
- Diagnostic criteria: Mean pulmonary artery pressure (MPAP) > 20 mmHg

**Pulmonary heart disease, or cor pulmonale, is:**

- Pulmonary hypertension (usually due to severe chronic lung disease) causing right heart failure, or
- Acute pulmonary embolism causing pulmonary hypertension or right heart strain

**Pulmonary heart disease indicators:**

- **Acute:** right heart (ventricular) strain or dilatation, right ventricular diastolic dysfunction, massive PE (including saddle embolus), cardiovascular shock, consideration of thrombectomy.
- **Chronic:** pulmonary hypertension, right ventricular hypertrophy or dilatation, right ventricular diastolic dysfunction, tricuspid insufficiency, pulmonic valve insufficiency



## Question: Acute Cor Pulmonale

**Pinson&Tang**

If the patient has pulmonary hypertension and right heart failure, can we assume it's cor pulmonale?

CC 2014 4<sup>th</sup> quarter states that the cor pulmonale is due to pulmonary hypertension.

If a patient has a PE and right heart strain, and doctor does not mention cor pulmonale should we query for it?

Documentation of "pulmonary hypertension" and "right heart failure", is assigned to code I27.29, secondary pulmonary hypertension and I50.810, right heart failure.

Cor pulmonale is assigned to code I27.81, Cor pulmonale, whether acute, chronic or unspecified. Although ICD-10 indexes acute cor pulmonale to I26.09, it cannot be assigned **unless there is a PE** according to *Coding Clinic* 2014 Q4 p. 21. Therefore, no specific ICD-10 code exists for acute cor pulmonale or acute pulmonary heart disease.

PE with "right heart strain" clinically indicates acute cor pulmonale. Query for acute cor pulmonale if impactful.

Documentation of PE, pulmonary hypertension and "acute" right heart strain/failure, can be assigned to code I26.09, PE with acute cor pulmonale, otherwise, "acute cor pulmonale" must be documented.

Pinson&Tang | Copyright © 2023

21

21

## Question: PSI-12

**Pinson&Tang**

How to query for POA status on PEs?

What about patients who have many risk factors, e.g., trauma, neoplasm, bedrest, with no imaging POA, then find the PE a few days after admission, it seems these should be POA "unknown"?

Would you encourage a query for these cases?

**U (Unknown):** Documentation is insufficient to determine if condition is present on admission and equivalent to a N (No).

If signs and symptoms of PE (not the risk factors of PE) are present on admission, assign POA = Yes.

If no signs or symptoms or other clinical indicators of PE on admission, assign POA = No.

Signs and symptoms may include hypoxemia (SpO2 < 95%), syncope, chest pain, shortness of breath.

Pinson&Tang | Copyright © 2023

22

22

## Case Study #1

**Pinson&Tang**

We advise our coders that if the PE and DVT equally meet the definition for principal diagnosis, either may be reported as the principal diagnosis.

The final principal diagnosis determination requires the answer to the following question: In the absence of the PE would the DVT require an inpatient admission?

If the answer is YES, then the DVT could be the PDX. If the answer is NO, then the PE would be the PDX. The answer to this question may require a clinical evaluation and directed to CDI.

PDX: Deep vein thrombosis  
SDX: Pulmonary embolism  
DRG 299, PVD with MCC

76-year-old female with PMHx of HTN, DM, asthma, RA on prednisone and methotrexate, presents for worsening LLE swelling and SOB on exertion that started 3 weeks ago. LLE swelling initially in distal leg, later progressively increased upward. She thought SOB was due to her asthma. Imaging of rt leg swelling did not show DVT at that time. She denies new CP, SOB, palpitation, or prolonged immobilization. On ER she was hypertensive 182/87, saturating 98% RA.

CTPA showing RUL filling defect, USG of LLE revealed nonocclusive thrombus involving the left common femoral vein through the posterior tibial veins. Hematology consulted for unprovoked pulmonary embolism.

Patient was admitted and started treatment with Xarelto. Echo done, troponin negative. Pt's home meds were continued and inh Pulmicort was added to her medication regimen. Pt improved during the hospital course and discharged home. See in 2-4 weeks for evaluation of unprovoked pulmonary embolism.

Pinson&Tang | Copyright © 2023

23

23

## Case Study #2

**Pinson&Tang**

72 yo with hx of CAD s/p PCI w stenting presents as transfer with saddle pulmonary embolus and demand ischemia undergoing urgent bilateral **pulmonary thrombectomy** post arrival.

**#Saddle PE with evidence of right heart strain**, I would consider this a provoked embolism in the light that he recently had COVID which is known to cause a hypercoagulable state, and no prior hx of thrombosis, no trauma to his legs, or prolonged sedentary activity/immobilization. Positive home Covid test 1 month ago; still positive 1 week ago. Heparin drip.

--**Echo**: Right ventricle cavity size is severely dilated. Systolic function is severely reduced. EF 45-50%. Normal diastolic function. Pulmonary arteries: Systolic pressure is mildly increased, estimated to be 41 mm Hg.

--**US leg**: Extensive nonocclusive DVT throughout left femoral vein, left popliteal vein, and left peroneal veins.

--**CTA Chest**: Saddle pulmonary emboli with extensive thrombus throughout the bilateral lower lobe arteries; evidence of acute right heart strain.

VS admit: T 36.6 HR 99 RR 30 BP 98/78;  
Lactate 3.2, Procal 0.45, HS Troponin 130, BNP 1112.

Recommend 3 months of therapy and then d/c. Elevated troponin likely demand ischemia.

CDI query for PE with acute cor pulmonale which was documented in the DS.

PDX: PE with acute cor pulmonale (I26.02)  
SDX: Post-COVID condition (U09.9)  
Acute DVTs (I82.412, I82.452, I82.432)  
Hypercoagulable state (D68.69)  
PX: Pulmonary thrombectomy

DRG 164, Major Chest Procedures **with CC**

Pinson&Tang | Copyright © 2023

24

24

## Case Study #3

65-year-old with a history of HTN, obesity, COPD, and DVT presents to the ED with SOB that has been gradually worsening over the past few days, chest pain that is sharp and pleuritic in nature, and swelling in both legs that has been present for several weeks and getting worse.

**VS:** HR 110, RR 24. D-dimer 1500. **PE:** Lungs: Decreased breath sounds at the bases, crackles; Legs: 4+ pitting edema in both lower extremities, erythema, tenderness to palpation. Patient admitted for acute pulmonary embolism and acute on chronic DVT of multiple lower extremities.

**Treatment and Plan:** IV Heparin, Warfarin

--**CXR:** Increased interstitial markings bilaterally with right heart enlargement

--**CTPA:** Multiple pulmonary emboli in both lungs with right ventricular strain

--**Doppler:** Deep veins: Diffuse thrombus in the common femoral veins, superficial femoral veins, and popliteal veins bilaterally

## Pinson&Tang

Acute/Chronic DVT	Pulmonary Emboli
<ul style="list-style-type: none"> <li>Swelling in both legs getting worse; 4+ pitting edema in both LE, erythema, tenderness to palpation</li> <li>Doppler: Diffuse thrombus in common femoral veins, superficial femoral veins, popliteal veins bilaterally</li> <li>Treatment: IV heparin, warfarin</li> </ul>	<ul style="list-style-type: none"> <li>Dyspnea RR 24, sharp chest pain; decreased breath sounds at bases, crackles</li> <li>CT: Multiple pulmonary emboli in both lungs with right ventricular strain</li> <li>Treatment: Same as DVT</li> </ul>

PDX: Acute DVTs

SDX: Pulmonary emboli with acute cor pulmonale (with query)

DRG 299, DVT with MCC 1.5380

DRG 175 – PE with MCC 1.3968

DRG 176 – PE with CC 0.8176

## Case Study #4

Pt with a history of rt lung cancer s/p chemo, asthma, came into the ER unresponsive found to have acute CVA with CT showing evidence of large core infarct in the proximal left MCA territory. There is also findings of pulmonary embolism. Patient was placed on vasopressor due to hypotension on arrival concerning for shock from **massive PE**. Emergent **thrombectomy** performed due to unstable vital signs requiring norepinephrine due to circulatory shock.

- Submassive pulmonary embolus with hypotension right heart strain on CT; appears to be the most acutely life-threatening.
- Aortic and left subclavian thrombus. Likely the cause for stroke. Treat with anticoagulation.
- Acute stroke. Quite large and essentially devastating.
- Stage III lung cancer which is likely the underlying cause of her hypercoagulable state

Progress Notes: 1) Acute CVA, 2) Acute massive PE, s/p thrombectomy. Cardiology consulted due to her elevated HS-troponin (17K-22K) and ST elevation on admission EKGs.

**Query:** Acute pulmonary embolism (PE) is documented throughout the chart. Can pulmonary embolism be further specified?

- Segmental/subsegmental pulmonary embolism with acute cor pulmonale
- Other (please specify)
- Clinically Undetermined ←

PDX: Pulmonary embolism (I26.99)

SDX: Acute CVA

STEMI

Circulatory shock

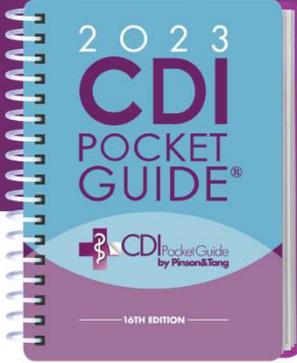
Lung cancer

Aortic and subclavian thrombus

PX: Thrombectomy

DRG 163, Major Chest Procedures with MCC

**Pinson&Tang**  
*contact@pinsonandtang.com*



## Q & A

### Thank you for attending!

All attendees will receive an email with a CEU evaluation link within 24 hours following the webinar

Pinson & Tang | Copyright © 2023

27