

Online Supplement

Table S1. Search Strategy for identification of studies reporting the validity of ICD-10 codes for identification of patients with pulmonary embolism

((PTE[TI] OR "Pulmonary Embolism"[MAJR] OR "Pulmonary Embolism"[TI] OR "Pulmonary embolus"[TI] OR "Pulmonary Embolism/etiology"[MAJR] OR "Pulmonary Embolism/prevention and control"[MeSH Terms] OR "Pulmonary Embolism/diagnosis"[MAJR] OR (pulmonar*[TI] AND (thrombos*[TI] OR thrombot*[TI] OR thromboem*[TI] OR emboli*[TI] OR "Thrombosis"[Mesh] OR "Embolism"[Mesh]))) OR ((deep*[TI] AND (vein*[TI] OR venous*[TI] OR "Veins"[Mesh]) AND (thrombos*[TI] OR thrombot*[TI] OR thromboem*[TI] OR emboli*[TI] OR "Thrombosis"[Mesh])) OR ("deep vein thrombosis"[TI] OR "deep venous thrombosis"[TI] OR "DVT*" [TI])) OR (VTE[TI] OR "Venous Thromboembolism"[TI] OR "Venous Thromboembolism"[MAJR] OR "Venous Thrombosis"[MAJR] OR "Venous Thrombosis"[TI] OR ((vein*[TI] OR venous*[TI] OR "Veins"[Mesh]) AND (thrombos*[TI] OR thrombot*[TI] OR thromboem*[TI] OR emboli*[TI] OR "Thrombosis"[Mesh]))) AND ("International Classification of Diseases"[Mesh] AND 10) OR "ICD-10" OR "ICD 10")

Table S2. Examples of CPT/ICD-10 codes for diagnostic or therapeutic procedures*		
	Codes	Definition
Diagnostic Procedures		
CTPA	B32S	Computerized Tomography (CT Scan) of Right Pulmonary Artery using High Osmolar Contrast
	B32S0ZZ	Computerized Tomography (CT Scan) of Right Pulmonary Artery using High Osmolar Contrast
	B32S1ZZ	Computerized Tomography (CT Scan) of Right Pulmonary Artery using Low Osmolar Contrast
	B32SYZZ	Computerized Tomography (CT Scan) of Right Pulmonary Artery using Other Contrast
	B32SZZZ	Computerized Tomography (CT Scan) of Right Pulmonary Artery
	B32T	Computerized Tomography (CT Scan) of Left Pulmonary Artery using High Osmolar Contrast
	B32T0ZZ	Computerized Tomography (CT Scan) of Left Pulmonary Artery using High Osmolar Contrast
	B32T1ZZ	Computerized Tomography (CT Scan) of Left Pulmonary Artery using Low Osmolar Contrast
	B32TYZZ	Computerized Tomography (CT Scan) of Left Pulmonary Artery using Other Contrast
	B32TZZZ	Computerized Tomography (CT Scan) of Left Pulmonary Artery
	71275	Computed Tomographic Angiography, Chest (Noncoronary), With Contrast Material(S), Including Noncontrast Images, If Performed, And Image Postprocessing
CT	71260	Computed Tomography (CT) scan chest with contrast material
	74160	Computed Tomography (CT) scan Abdomen with contrast material
	70498	Computed tomographic angiography, neck, with contrast material(s), including noncontrast images, if performed, and image postprocessing
Ventilation/ perfusion imaging	78580 ⁵⁴	Pulmonary perfusion imaging
	78582 ⁵⁴	Pulmonary ventilation (eg, aerosol or gas)

		and perfusion imaging
	78584 ⁵⁴	Pulmonary perfusion with vent single breath (Deleted code effective Jan 1, 2012)
	78585 ⁵⁴	Pulmonary perfusion w/ washout, w or w/o single breath (Deleted code effective Jan 1, 2012)
	78588 ⁵⁵	Pulmonary perfusion imaging, particulate, with ventilation; rebreathing and washout, with or without single breath (Deleted code effective Jan 1, 2012)
	78598	Quantitative differential pulmonary perfusion and ventilation (eg, aerosol or gas), including imaging when performed
Pulmonary angiography	75741 ⁵⁴	Angiography, pulmonary, unilateral, selective, radiological supervision and interpretation
	75743 ⁵⁴	Angiography, pulmonary, bilateral, selective, radiological supervision, and interpretation
	75746 ⁵⁴	Angiography, pulmonary by nonselective catheter or venous injection, radiological supervision and interpretation
	75746 ⁵⁴	Angiography, pulmonary by nonselective catheter or venous injection, radiological supervision and interpretation
Therapeutic procedures		
Systemic thrombolysis	3E03317 ⁵⁶	Introduction of Other Thrombolytic into Peripheral Vein, Percutaneous Approach
	3E04017 ⁵⁶	Introduction of Other Thrombolytic into Central Vein, Open Approach
	3E04317 ⁵⁶	Introduction of Other Thrombolytic into Central Vein, Percutaneous Approach
	Z92.82 ^{57, 58}	Status post administration of tPA (rtPA) in a different facility within the last 24 hours prior to admission to current facility
IVC filter	06H03DZ	Insertion of Intraluminal Device into Inferior Vena Cava, Percutaneous Approach
	06H00DZ	Insertion of Intraluminal Device into Inferior Vena Cava, Open Approach
	06V03DZ	Restriction of Inferior Vena Cava with Intraluminal Device, Percutaneous Approach
	06V00DZ	Restriction of Inferior Vena Cava with

		Intraluminal Device, Open Approach
	37191 ⁵⁹	Other Transcatheter Procedures (IVC filter placement)
Catheter-directed therapies	3E06017 ⁵⁶	Introduction of Other Thrombolytic into Central Artery, Open Approach
	3E06317 ⁵⁶	Introduction of Other Thrombolytic into Central Artery, Percutaneous Approach
	3E03017	Introduction of other thrombolytic into peripheral vein, open approach
	3E03317	Introduction of other thrombolytic into peripheral vein, percutaneous approach
	37201 ⁶⁰	Transcatheter Arterial Infusion for Thrombolysis (Deleted code effective Jan 1, 2013)
	37211 ⁶⁰	Transcatheter therapy, arterial infusion for thrombolysis other than coronary
Surgical embolectomy	02CQ0ZZ	Extirpation of Matter from Right Pulmonary Artery, Open Approach
	02CR0ZZ	Extirpation of Matter from Left Pulmonary Artery, Open Approach
	33910 ⁶¹	Pulmonary artery embolectomy
	33915 ⁶²	Pulmonary artery embolectomy
	33916 ⁶¹	Surgical Procedures on the Pulmonary Artery
Percutaneous embolectomy	02CP3ZZ	Extirpation of Matter from Pulmonary Trunk, Percutaneous Approach
	02CQ3ZZ	Extirpation of Matter from Right Pulmonary Artery, Percutaneous Approach
	02CR3ZZ	Extirpation of Matter from Left Pulmonary Artery, Percutaneous Approach
	37184 ⁶⁰	Primary percutaneous transluminal mechanical thrombectomy, noncoronary, arterial or arterial bypass graft, including fluoroscopic guidance and intraprocedural pharmacological thrombolytic injection(s)
	37184 ⁶⁰	Primary percutaneous transluminal mechanical thrombectomy, noncoronary, arterial or arterial bypass graft, including fluoroscopic guidance and intraprocedural pharmacological thrombolytic injection(s)
Extracorporeal Membrane Oxygenation (ECMO)	5A1522F	Extracorporeal Oxygenation, Membrane, Central
	5A1522G	Extracorporeal Oxygenation, Membrane,

		Peripheral VenO-arterial
	5A1522H	Extracorporeal Oxygenation, Membrane, Peripheral VenO-venous
	33946	Extracorporeal membrane oxygenation (ECMO)/ extracorporeal life support (ECLS) provided by physician; initiation, veno-venous
	33947	Extracorporeal membrane oxygenation (ECMO)/ extracorporeal life support (ECLS) provided by physician; initiation, veno-arterial.
	33948	Extracorporeal membrane oxygenation (ECMO)/ extracorporeal life support (ECLS) provided by physician; daily management, each day, veno-venous.
	33952	Extracorporeal membrane oxygenation (ECMO)/ extracorporeal life support (ECLS) provided by physician; insertion of peripheral (arterial and/or venous) cannula(e), percutaneous, 6 years and older (includes fluoroscopic guidance, when performed)
	33954	Extracorporeal membrane oxygenation (ECMO)/ extracorporeal life support (ECLS) provided by physician; insertion of peripheral (arterial and/or venous) cannula(e), open, 6 years and older.