

Online Supplemental Data

Supplemental Table 1. List of ICD-9-CM codes for the conditions, anticoagulation contraindications used in the study.

Supplemental Table 2. Baseline characteristics of complicated pulmonary embolism before propensity score matching.

Supplemental Data 3. Equation for propensity score

Supplemental Data 4: Equation for standardized mean difference calculation

Supplemental Table 1: List of ICD-9-CM Codes

PROCEDURES/CONDITIONS	ICD-9-CM Codes
Inferior Vena Cava Filter placement	387
Acute Pulmonary Embolism	41519
Shock	78550, 78551, 78552, 78559
Septic Shock	78552
Cardiogenic Shock	78551
Acute Respiratory Failure	51881, 51882, 51884, 7991
Acute Myocardial Infarction	410x
Sepsis	0031, 0202, 0223, 0362, 0380, 0381, 03810, 03811, 03812, 03819, 0382, 0383, 03840, 03841, 03842, 03843, 03844, 03849, 0388, 0389, 0545, 449, 77181, 7907, 99591, 99592
Pneumonia	00322, 020x, 0212, 0221, 0310, 0391, 0521, 0551, 0730, 0830, 1124, 1140 1144, 1145, 11505, 11515, 11595, 1304, 1363, 480x, 481, 482x, 4823x, 4824x, 4828x, 483x, 484x, 485, 486, 5130, 5171
Hip fracture	820x, 820xx, 9053, V5413, V5423
Lung Cancer	162x, 20921, 2312, V1011
Mechanical Ventilation	9670, 9671, 9672
Lower Extremity DVT	45111, 45119, 4512, 45181, 4519, 45340, 45341, 45342, 45350, 45351, 45352, 45372, 4538, 4539
Anticoagulation contraindications ICD-9-CM	
Intracranial Bleeding	430, 431, 432x, 852x, 853x
Other Major Bleeding	4560, 45620, 5307, 53082, 53100, 53101, 53120, 53121, 53140, 53141, 53160, 53161, 53200, 53201, 53220, 53221, 53240, 53241, 53260, 53261, 53300, 53301, 53320, 53321, 53340, 53341, 53360, 53361, 53400, 53401, 53420, 53421, 53440, 53441, 53460, 53461, 5693, 5780, 5781, 5789, 64000, 64001, 64003, 64080, 64081, 64083, 64090, 64091, 64093, 64100, 64101, 64103, 64110, 64111, 64113, 64120, 64121, 64123, 64130, 64131, 64133, 64180, 64181, 64183, 64190, 64191, 64193, 2463, 2528, 2800, 2851, 2878, 2879, 36361, 36362, 37481, 37632, 37742, 37923, 4590, 53021, 53501, 53511, 53521, 53531, 53541, 53551, 53561, 53571, 56881, 56985, 6021, 6262, 63410, 63411, 63412, 63510, 63511, 63512, 63610, 63611, 63612, 63710, 63711, 63712, 6381, 6391, 66454, 66570, 66571, 66572, 66574, 66600, 66602, 66604, 66610, 66612, 66614, 66620, 66622, 66624, 67430, 67432, 67434, 7725, 7847, 7848, 7863, 9582, 99811, 99812
Hemophilia and von-willibrande's disease	2860, 2861, 2862, 2863, 2864
Thrombocytopenia	2873x, 2874, 28984, 2875
Active GI ulcer	53110 , 53111, 53130, 53131, 53150, 53151, 53210, 53211, 53230, 53231, 53250, 53251, 53310, 53311, 53330, 53331, 53350, 53351, 53410, 53411, 53430, 53431, 53450, 53451
Cerebral aneurysm	09487, 4373, 74781
Aortic Dissection	4410, 44100, 44101, 44102, 44103
Endocarditis	03642, 09320, 09321, 09322, 09323, 09884, 4210, 4211, 4219
Malignant Hypertension	4010 , 40200, 40201, 4030, 40300, 40301, 40400, 40401, 40402, 40403, 40501,

	40509
Burns	906x, 940x, 941xx, 942xx, 943xx, 944xx, 945xx, 946x, 947x, 948xx, 949x
Brain surgery	011x, 012x, 013x, 014x, 015x, 021x, 029x, 075x, 076x, 077x, 380, 3831, 3841, 3851, 3861, 3881, 3928
Spine Surgery	810x, 813x, 030x, 805x, 846x, 848x, 816x, 8451, 0332, 0339, 034
Anticoagulation contraindications ICD-9-CM	
Eye Surgery	116x, 125x, 126x, 127x, 1311, 1319, 132, 133, 1341, 1342, 1343, 1351, 1359, 136x, 137x, 138, 139, 1390, 1391, 143x, 1441, 1449, 145x, 1421, 1422, 142x, 120x, 121x, 123x, 124x, 128x, 129x, 130x, 140x, 146, 147x, 148x, 149
Spinal Puncture	0331, 8721
Thrombolytic therapy	9910

Supplemental Table 2: Baseline characteristics of complicated pulmonary embolism before propensity score matching

Baseline Characteristics	No. (%)	IVC filter placed (N=46,984)	No IVC filter (N=207,481)
	Overall (N=254,465)		
Age (y) ± SEM	66.4± 0.071	65.73±0.162	66.56±0.07
Male	49.8	51.9	49.3
Race			
White	60.9	62.1	60.6
Non-White	23.3	24	23.2
Missing	15.8	13.8	16.2
Discharge Disposition			
Home	19.7	21.1	19.4
Short Term Hospital	5.4	3.6	5.7
Another type of facility	28.9	40	26.4
Home Health Care	12.5	14	12.2
Length of Stay (days) ± SEM	14.1± 0.07	20.6±0.21	12.7±0.079
Congestive Heart Failure	32	25.2	33.5
Valvular diseases	6.9	5.5	7.2
Pulmonary circulation diseases	8	6.4	8.3
Peripheral Vascular Disease	6.8	7.4	6.6
Hypertension	26.4	22.6	27.3
Paralysis	4.2	5.4	3.9
Chronic Pulmonary Disease	17.7	14.4	18.5
Diabetes Mellitus			
Without Complications	17.4	14.1	18.2
With Complications	3	2.6	3.1
Hypothyroidism	6.1	5	6.3
Chronic Renal Failure	11.8	9.4	12.4
Liver Disease	2	2.1	1.9
Peptic Ulcer Disease	0	0	0
Metastatic Cancer	9.7	10.5	9.5
Other Neurological Disorder	7.2	7.2	7.2
Lymphoma	2.8	3	2.8
HIV	0.6	0.5	0.6
Solid Tumor without metastasis	22.3	24.3	21.8

Arthritis	9.3	8.3	9.5
Dementia	5.1	4.2	5.4
Baseline Characteristics	No. (%)	IVC filter placed (N=46,984)	No IVC filter (N=207,481)
	Overall (N=254,465)		
Coagulopathy	7.2	9.3	6.7
Obesity	10.1	8.8	10.4
Weight loss	13.7	16.8	13
Electrolyte, Fluid Disorders	38.8	37.9	39
Blood Loss	0	0	0
Deficiency Anemia	13.6	13.4	13.7
Alcohol Abuse	2.8	2.8	2.8
Drug Abuse	0	0	0
Psychosis	1.5	1	1.6
Depression	4.6	3.7	4.8
Sepsis	34.8	37.6	34.2
Pneumonia	34	33.6	34.1
Lung Cancer	5.9	5.2	6.1
Hip Fracture	1.3	1.3	1.3
Intracranial Bleeding	1.5	3.5	1.1
Other Major Bleeds	17.6	33.2	14.1
Hemophilia, vonWillibrande deficiency	0.2	0.3	0.2
Thrombocytopenia	7.6	9.7	7.1
Cerebral Aneurysm	0.1	0.2	0.1
Aortic Dissection	0.1	0.1	0.1
Endocarditis	0.9	0.7	1
Malignant Hypertension	0.9	0.9	1
Burns	0.1	0.1	0.1
Brain Surgery	0.4	1.4	0.2
Spine Surgery	0.5	1.2	0.3
Spinal Puncture	1.5	1.8	1.4
Lower Extremity DVT	29	56.7	23.9

Supplemental Data 3

The propensity score is defined as the probability of receiving treatment based on measured covariates:

$$e(x) = P(Z=1 | X)$$

where $e(x)$ is the abbreviation for propensity score, P a probability, $Z=1$ a treatment indicator with values 0 for control and 1 for treatment, the "|" symbol stands for conditional on, and X is a set of observed covariates.

Supplemental Data 4

The equation used for calculating standardized mean difference

$$SMD = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{(S_1^2 + S_2^2)/2}}$$

$\bar{X}_1$ and $\bar{X}_2$ are sample mean for the treated and control groups, respectively; S_1 and S_2 are sample variance for the treated and control groups.

For dichotomous variables, the following formula is used to calculate standardized mean difference

$$SMD = \frac{\hat{p}_1 - \hat{p}_2}{\sqrt{[\hat{p}_1(1 - \hat{p}_1) + \hat{p}_2(1 - \hat{p}_2)]/2}}$$

where p_1 and p_2 are prevalence of dichotomous variables in the treated and control groups, respectively.