



**AHRQ Quality Indicators™ (AHRQ QI™)
ICD-9-CM and ICD-10-CM/PCS
Specification Enhanced Version 5.0**

**Patient Safety Indicator #12 (PSI #12)
Perioperative Pulmonary Embolism or Deep
Vein Thrombosis Rate**

**October 2015
Provider-Level Indicator
Type of Score: Rate**

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PSI #12 Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate

| DESCRIPTION |
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Perioperative pulmonary embolism or deep vein thrombosis (secondary diagnosis) per 1,000 surgical discharges for patients ages 18 years and older. Excludes cases with principal diagnosis for pulmonary embolism or deep vein thrombosis; cases with secondary diagnosis for pulmonary embolism or deep vein thrombosis present on admission; cases in which interruption of vena cava occurs before or on the same day as the first operating room procedure; and obstetric discharges.

[NOTE: The software provides the rate per hospital discharge. However, common practice reports the measure as per 1,000 discharges. The user must multiply the rate obtained from the software by 1,000 to report events per 1,000 hospital discharges.]

PSI #12 Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate

| NUMERATOR | |
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| Discharges, among cases meeting the inclusion and exclusion rules for the denominator, with a secondary ICD-9-CM or ICD-10-CM diagnosis code for deep vein thrombosis or a secondary ICD-9-CM or ICD-10-CM diagnosis code for pulmonary embolism. | |
| <i>Deep Vein Thrombosis Diagnosis Codes: (DEEPVID and DEEPVIB)*</i> | |

For discharges prior to October 1, 2011: (DEEPVID)

| ICD-9-CM | Description | ICD-10-CM | Description |
|----------|--|-----------|---|
| 45111 | PHLEBITIS AND THROMBOSIS OF FEMORAL VEIN (DEEP) | | <i>Not applicable; no equivalent ICD-10 code</i> |
| 45119 | PHLEBITIS AND THROMBOPHLEBITIS - OF DEEP VESSEL OF | | |
| 4512 | PHLEBITIS AND THROMBOPHLEBITIS OF LOWER EXTREMITIES UNSPECIFIED | | *DEEPVIB valid for FY 2010 forward. Prior years use DEEPVID. |
| 45181 | PHLEBITIS AND THROMBOPHLEBITIS OF ILIAC VEIN | | |
| 4519 | PHLEBITIS AND THROMBOPHLEBITIS OF OTHER SITES - OF UNSPECIFIED SITE | | |
| 45340 | DVT-EMBLSM LOWER EXT NOS | | |
| 45341 | DVT-EMB PROX LOWER EXT | | |
| 45342 | DVT-EMB DISTAL LOWER EXT | | |
| 4538 | OTHER VENOUS EMBOLISM AND THROMBOSIS OF OTHER SPECIFIED VEINS | | |
| 4539 | OTHER VENOUS EMBOLISM AND THROMBOSIS OF UNSPECIFIED SITE | | |

For discharges on or after October 1, 2011: (DEEPVIB)

| ICD-9-CM | Description | ICD-10-CM | Description |
|----------|---|-----------|--|
| 45111 | PHLEBITIS AND THROMBOSIS OF FEMORAL VEIN (DEEP) (SUPERFICIAL) | I8010 | Phlebitis and thrombophlebitis of unspecified femoral vein |
| 45119 | PHLEBITIS AND THROMBOPHLEBITIS - OF DEEP VESSEL OF LOWER EXTREMITIES - OTHER | I8011 | Phlebitis and thrombophlebitis of right femoral vein |

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| 45181 | PHLEBITIS AND THROMBOPHLEBITIS OF ILIAC VEIN | I8012 | Phlebitis and thrombophlebitis of left femoral vein |
| 45340 | DVT-EMBLSM LOWER EXT NOS | I8013 | Phlebitis and thrombophlebitis of femoral vein, bilateral |
| 45341 | DVT-EMB PROX LOWER EXT | I80201 | Phlebitis and thrombophlebitis of unspecified deep vessels |
| 45342 | DVT-EMB DISTAL LOWER EXT | I80202 | Phlebitis and thrombophlebitis of unspecified deep vessels |
| | | I80203 | Phlebitis and thrombophlebitis of unspecified deep vessels |
| | | I80209 | Phlebitis and thrombophlebitis of unspecified deep vessels of unspecified lower extremity |
| | | I80211 | Phlebitis and thrombophlebitis of right iliac vein |
| | | I80212 | Phlebitis and thrombophlebitis of left iliac vein |
| | | I80213 | Phlebitis and thrombophlebitis of iliac vein, bilateral |
| | | I80219 | Phlebitis and thrombophlebitis of unspecified iliac vein |
| | | I80221 | Phlebitis and thrombophlebitis of right popliteal vein |
| | | I80222 | Phlebitis and thrombophlebitis of left popliteal vein |
| | | I80223 | Phlebitis and thrombophlebitis of popliteal vein, bilateral |
| | | I80229 | Phlebitis and thrombophlebitis of unspecified popliteal |
| | | I80231 | Phlebitis and thrombophlebitis of right tibial vein |
| | | I80232 | Phlebitis and thrombophlebitis of left tibial vein |
| | | I80233 | Phlebitis and thrombophlebitis of tibial vein, bilateral |
| | | I80239 | Phlebitis and thrombophlebitis of unspecified tibial vein |
| | | I80291 | Phlebitis and thrombophlebitis of other deep vessels of |
| | | I80292 | Phlebitis and thrombophlebitis of other deep vessels of |
| | | I80293 | Phlebitis and thrombophlebitis of other deep vessels of |
| | | I80299 | Phlebitis and thrombophlebitis of other deep vessels of |
| | | I82401 | Acute embolism and thrombosis of unspecified deep veins |
| | | I82402 | Acute embolism and thrombosis of unspecified deep veins |
| | | I82403 | Acute embolism and thrombosis of unspecified deep veins |
| | | I82409 | Acute embolism and thrombosis of unspecified deep veins |
| | | I82411 | Acute embolism and thrombosis of right femoral vein |

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| I82412 | Acute embolism and thrombosis of left femoral vein |
| I82413 | Acute embolism and thrombosis of femoral vein, bilateral |
| I82419 | Acute embolism and thrombosis of unspecified femoral |
| I82421 | Acute embolism and thrombosis of right iliac vein |
| I82422 | Acute embolism and thrombosis of left iliac vein |
| I82423 | Acute embolism and thrombosis of iliac vein, bilateral |
| I82429 | Acute embolism and thrombosis of unspecified iliac vein |
| I82431 | Acute embolism and thrombosis of right popliteal vein |
| I82432 | Acute embolism and thrombosis of left popliteal vein |
| I82433 | Acute embolism and thrombosis of popliteal vein, bilateral |
| I82439 | Acute embolism and thrombosis of unspecified popliteal |
| I82441 | Acute embolism and thrombosis of right tibial vein |
| I82442 | Acute embolism and thrombosis of left tibial vein |
| I82443 | Acute embolism and thrombosis of tibial vein, bilateral |
| I82449 | Acute embolism and thrombosis of unspecified tibial vein |
| I82491 | Acute embolism and thrombosis of other specified deep |
| I82492 | Acute embolism and thrombosis of other specified deep |
| I82493 | Acute embolism and thrombosis of other specified deep |
| I82499 | Acute embolism and thrombosis of other specified deep |
| I824Y1 | Acute embolism and thrombosis of unspecified deep veins |
| I824Y2 | Acute embolism and thrombosis of unspecified deep veins |
| I824Y3 | Acute embolism and thrombosis of unspecified deep veins |
| I824Y9 | Acute embolism and thrombosis of unspecified deep veins |
| I824Z1 | Acute embolism and thrombosis of unspecified deep veins |
| I824Z2 | Acute embolism and thrombosis of unspecified deep veins |
| I824Z3 | Acute embolism and thrombosis of unspecified deep veins |
| I824Z9 | Acute embolism and thrombosis of unspecified deep veins |

| <i>Pulmonary embolism diagnosis codes: (PULMOID)</i> | | | |
|---|--|------------------|--|
| ICD-9-CM | Description | ICD-10-CM | Description |
| 4151 | PULMONARY EMBOLISM AND INFARCTION (end 1996) | I2602 | Saddle embolus of pulmonary artery with acute cor pulmonale |
| 41511 | IATROGENIC PULMONARY EMBOLISM AND INFARCTION | I2609 | Other pulmonary embolism with acute cor pulmonale |
| 41513 | SADDLE EMBOLUS OF PULMONARY ARTERY | I2692 | Saddle embolus of pulmonary artery without acute cor pulmonale |
| 41519 | OTHER | I2699 | Other pulmonary embolism without acute cor pulmonale |

[Note: Codes that are no longer valid may be retained for compatibility with historical data. These codes will have no impact on numerator counts in more recent data using only currently valid codes.]

PSI #12 Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate

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| NUMERATOR EXCLUSIONS |
| <i>Not Applicable</i> |

PSI #12 Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate

| DENOMINATOR |
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| Surgical discharges, for patients ages 18 years and older, with any-listed ICD-9-CM or ICD-10-PCS procedure codes for an operating room procedure. Surgical discharges are defined by specific DRG or MS-DRG codes. |
| <u>Appendix A - Operating Room Procedure Codes</u> |
| <u>Appendix D - Surgical Discharge DRGs (for discharges prior to October 1, 2017)</u> |
| <u>Appendix E - Surgical Discharge MS-DRGs (for discharges on or after October 1, 2007)</u> |
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PSI #12 Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate

Exclude cases:

- with a principal ICD-9-CM or ICD-10-CM diagnosis code (or secondary diagnosis present on admission) for deep vein thrombosis (see above)
- with a principal ICD-9-CM or ICD-10-CM diagnosis code (or secondary diagnosis present on admission) for pulmonary embolism (see above)
- where a procedure for interruption of vena cava occurs before or on the same day as the first operating room procedure¹
- any procedure code for extracorporeal membrane oxygenation (ECMO)
- MDC 14 (pregnancy, childbirth, and puerperium)
- with missing gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing), or principal diagnosis (DX1=missing)

¹ If day of procedure is not available in the input data file, the rate may be slightly lower than if the information was available

| DENOMINATOR EXCLUSIONS | | | |
|--|---------------------------|------------|--|
| <i>Interruption of vena cava procedure code: (VENACIP)</i> | | | |
| ICD-9-CM | Description | ICD-10-PCS | Description |
| 387 | INTERRUPTION OF VENA CAVA | 06H00DZ | Insertion of Intraluminal Device into Inferior Vena Cava, Open Approach |
| | | 06H03DZ | Insertion of Intraluminal Device into Inferior Vena Cava, Percutaneous Approach |
| | | 06H04DZ | Insertion of Intraluminal Device into Inferior Vena Cava, Percutaneous Endoscopic Approach |
| | | 06L00CZ | Occlusion of Inferior Vena Cava with Extraluminal Device, Open Approach |
| | | 06L00DZ | Occlusion of Inferior Vena Cava with Intraluminal Device, Open Approach |
| | | 06L00ZZ | Occlusion of Inferior Vena Cava, Open Approach |
| | | 06L03CZ | Occlusion of Inferior Vena Cava with Extraluminal Device, Percutaneous Approach |

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|---------|--|
| 06L03DZ | Occlusion of Inferior Vena Cava with Intraluminal Device, Percutaneous Approach |
| 06L03ZZ | Occlusion of Inferior Vena Cava, Percutaneous Approach |
| 06L04CZ | Occlusion of Inferior Vena Cava with Extraluminal Device, Percutaneous Endoscopic Approach |
| 06L04DZ | Occlusion of Inferior Vena Cava with Intraluminal Device, Percutaneous Endoscopic Approach |
| 06L04ZZ | Occlusion of Inferior Vena Cava, Percutaneous Endoscopic Approach |
| 06V00CZ | Restriction of Inferior Vena Cava with Extraluminal Device, Open Approach |
| 06V00DZ | Restriction of Inferior Vena Cava with Intraluminal Device, Open Approach |
| 06V00ZZ | Restriction of Inferior Vena Cava, Open Approach |
| 06V03CZ | Restriction of Inferior Vena Cava with Extraluminal Device, Percutaneous Approach |
| 06V03DZ | Restriction of Inferior Vena Cava with Intraluminal Device, Percutaneous Approach |
| 06V03ZZ | Restriction of Inferior Vena Cava, Percutaneous Approach |
| 06V04CZ | Restriction of Inferior Vena Cava with Extraluminal Device, Percutaneous Endoscopic Approach |
| 06V04DZ | Restriction of Inferior Vena Cava with Intraluminal Device, Percutaneous Endoscopic Approach |
| 06V04ZZ | Restriction of Inferior Vena Cava, Percutaneous Endoscopic Approach |

| ECMO procedure code: (ECMOP) | | | |
|-------------------------------------|--------------------|-------------------|--------------------|
| ICD-9-CM | Description | ICD-10-PCS | Description |

3965

EXTRACORPOREAL MEMBRANE OXYGENATION

5A15223

Extracorporeal Membrane Oxygenation, Continuous