SUPPLEMENTAL INFORMATION

**Supplemental Table 1A.** **ICD-9-CM and ICD-10-CM codes used to identify myocardial infarction**

|  |  |  |
| --- | --- | --- |
| Code | Description | ICD\_CM type |
| I22 | Subsequent ST elevation (STEMI) and non-ST elevation (NSTEMI) myocardial infarction | ICD-10-CM |
| I22.0 | Subsequent ST elevation (STEMI) myocardial infarction of anterior wall | ICD-10-CM |
| I22.1 | Subsequent ST elevation (STEMI) myocardial infarction of inferior wall | ICD-10-CM |
| I22.2 | Subsequent non-ST elevation (NSTEMI) myocardial infarction | ICD-10-CM |
| I22.8 | Subsequent ST elevation (STEMI) myocardial infarction of other sites | ICD-10-CM |
| I22.9 | Subsequent ST elevation (STEMI) myocardial infarction of unspecified site | ICD-10-CM |
| I21 | ST elevation (STEMI) and non-ST elevation (NSTEMI) myocardial infarction | ICD-10-CM |
| I21.0 | ST elevation (STEMI) myocardial infarction of anterior wall | ICD-10-CM |
| I21.01 | ST elevation (STEMI) myocardial infarction involving left main coronary artery | ICD-10-CM |
| I21.02 | ST elevation (STEMI) myocardial infarction involving left anterior descending coronary artery | ICD-10-CM |
| I21.09 | ST elevation (STEMI) myocardial infarction involving other coronary artery of anterior wall | ICD-10-CM |
| I21.1 | ST elevation (STEMI) myocardial infarction of inferior wall | ICD-10-CM |
| I21.11 | ST elevation (STEMI) myocardial infarction involving right coronary artery | ICD-10-CM |
| I21.19 | ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall | ICD-10-CM |
| I21.2 | ST elevation (STEMI) myocardial infarction of other sites | ICD-10-CM |
| I21.21 | ST elevation (STEMI) myocardial infarction involving left circumflex coronary artery | ICD-10-CM |
| I21.29 | ST elevation (STEMI) myocardial infarction involving other sites | ICD-10-CM |
| I21.3 | ST elevation (STEMI) myocardial infarction of unspecified site | ICD-10-CM |
| I21.4 | Non-ST elevation (NSTEMI) myocardial infarction | ICD-10-CM |
| 410 | ACUTE MYOCARDIAL INFARCT | ICD-9-CM |
| 410.0 | AMI ANTEROLATERAL WALL\* | ICD-9-CM |
| 410.00 | Acute myocardial infarction of anterolateral wall, episode of care unspecified | ICD-9-CM |
| 410.01 | Acute myocardial infarction of anterolateral wall, initial episode of care | ICD-9-CM |
| 410.02 | Acute myocardial infarction of anterolateral wall, subsequent episode of care | ICD-9-CM |
| 410.1 | AMI ANTERIOR WALL NEC\* | ICD-9-CM |
| 410.10 | Acute myocardial infarction of other anterior wall, episode of care unspecified | ICD-9-CM |
| 410.11 | Acute myocardial infarction of other anterior wall, initial episode of care | ICD-9-CM |
| 410.12 | Acute myocardial infarction of other anterior wall, subsequent episode of care | ICD-9-CM |
| 410.2 | AMI INFEROLATERAL WALL\* | ICD-9-CM |
| 410.20 | Acute myocardial infarction of inferolateral wall, episode of care unspecified | ICD-9-CM |
| 410.21 | Acute myocardial infarction of inferolateral wall, initial episode of care | ICD-9-CM |
| 410.22 | Acute myocardial infarction of inferolateral wall, subsequent episode of care | ICD-9-CM |
| 410.3 | AMI INFEROPOSTERIOR WALL | ICD-9-CM |
| 410.30 | Acute myocardial infarction of inferoposterior wall, episode of care unspecified | ICD-9-CM |
| 410.31 | Acute myocardial infarction of inferoposterior wall, initial episode of care | ICD-9-CM |
| 410.32 | Acute myocardial infarction of inferoposterior wall, subsequent episode of care | ICD-9-CM |
| 410.4 | AMI INFERIOR WALL NEC\* | ICD-9-CM |
| 410.40 | Acute myocardial infarction of other inferior wall, episode of care unspecified | ICD-9-CM |
| 410.41 | Acute myocardial infarction of other inferior wall, initial episode of care | ICD-9-CM |
| 410.42 | Acute myocardial infarction of other inferior wall, subsequent episode of care | ICD-9-CM |
| 410.5 | AMI LATERAL WALL NEC\* | ICD-9-CM |
| 410.50 | Acute myocardial infarction of other lateral wall, episode of care unspecified | ICD-9-CM |
| 410.51 | Acute myocardial infarction of other lateral wall, initial episode of care | ICD-9-CM |
| 410.52 | Acute myocardial infarction of other lateral wall, subsequent episode of care | ICD-9-CM |
| 410.6 | TRUE POSTERIOR INFARCT\* | ICD-9-CM |
| 410.60 | True posterior wall infarction, episode of care unspecified | ICD-9-CM |
| 410.61 | True posterior wall infarction, initial episode of care | ICD-9-CM |
| 410.62 | True posterior wall infarction, subsequent episode of care | ICD-9-CM |
| 410.7 | SUBENDOCARDIAL INFARCT\* | ICD-9-CM |
| 410.70 | Subendocardial infarction, episode of care unspecified | ICD-9-CM |
| 410.71 | Subendocardial infarction, initial episode of care | ICD-9-CM |
| 410.72 | Subendocardial infarction, subsequent episode of care | ICD-9-CM |
| 410.8 | MYOCARDIAL INFARCT NEC\* | ICD-9-CM |
| 410.80 | Acute myocardial infarction of other specified sites, episode of care unspecified | ICD-9-CM |
| 410.81 | Acute myocardial infarction of other specified sites, initial episode of care | ICD-9-CM |
| 410.82 | Acute myocardial infarction of other specified sites, subsequent episode of care | ICD-9-CM |
| 410.9 | MYOCARDIAL INFARCT NOS\* | ICD-9-CM |
| 410.90 | Acute myocardial infarction of unspecified site, episode of care unspecified | ICD-9-CM |
| 410.91 | Acute myocardial infarction of unspecified site, initial episode of care | ICD-9-CM |
| 410.92 | Acute myocardial infarction of unspecified site, subsequent episode of care | ICD-9-CM |

**Supplemental Table 1B.** **ICD-9-CM and ICD-10-CM codes used to identify pulmonary embolism**

|  |  |  |
| --- | --- | --- |
| Code | Description | ICD\_CM type |
| 415.11 | Iatrogenic pulmonary embolism and infarction | ICD-9-CM |
| 415.12 | Septic pulmonary embolism | ICD-9-CM |
| 415.13 | Saddle embolus of pulmonary artery | ICD-9-CM |
| 415.19 | Other pulmonary embolism and infarction | ICD-9-CM |
| I26 | Pulmonary embolism | ICD-10-CM |
| I26.0 | Pulmonary embolism with acute cor pulmonale | ICD-10-CM |
| I26.01 | Septic pulmonary embolism with acute cor pulmonale | ICD-10-CM |
| I26.02 | Saddle embolus of pulmonary artery with acute cor pulmonale | ICD-10-CM |
| I26.09 | Other pulmonary embolism with acute cor pulmonale | ICD-10-CM |
| I26.9 | Pulmonary embolism without acute cor pulmonale | ICD-10-CM |
| I26.92 | Saddle embolus of pulmonary artery without acute cor pulmonale | ICD-10-CM |
| I26.99 | Other pulmonary embolism without acute cor pulmonale | ICD-10-CM |

**Supplemental Table 1C.** **ICD-9-CM and ICD-10-CM codes used to identify ischemic stroke**

|  |  |  |
| --- | --- | --- |
| Code | Description | ICD\_CM type |
| I63 | Cerebral infarction | ICD-10-CM |
| I63.0 | Cerebral infarction due to thrombosis of precerebral arteries | ICD-10-CM |
| I63.00 | Cerebral infarction due to thrombosis of unspecified precerebral artery | ICD-10-CM |
| I63.01 | Cerebral infarction due to thrombosis of vertebral artery | ICD-10-CM |
| I63.011 | Cerebral infarction due to thrombosis of right vertebral artery | ICD-10-CM |
| I63.012 | Cerebral infarction due to thrombosis of left vertebral artery | ICD-10-CM |
| I63.019 | Cerebral infarction due to thrombosis of unspecified vertebral artery | ICD-10-CM |
| I63.02 | Cerebral infarction due to thrombosis of basilar artery | ICD-10-CM |
| I63.03 | Cerebral infarction due to thrombosis of carotid artery | ICD-10-CM |
| I63.031 | Cerebral infarction due to thrombosis of right carotid artery | ICD-10-CM |
| I63.032 | Cerebral infarction due to thrombosis of left carotid artery | ICD-10-CM |
| I63.039 | Cerebral infarction due to thrombosis of unspecified carotid artery | ICD-10-CM |
| I63.09 | Cerebral infarction due to thrombosis of other precerebral artery | ICD-10-CM |
| I63.1 | Cerebral infarction due to embolism of precerebral arteries | ICD-10-CM |
| I63.10 | Cerebral infarction due to embolism of unspecified precerebral artery | ICD-10-CM |
| I63.11 | Cerebral infarction due to embolism of vertebral artery | ICD-10-CM |
| I63.111 | Cerebral infarction due to embolism of right vertebral artery | ICD-10-CM |
| I63.112 | Cerebral infarction due to embolism of left vertebral artery | ICD-10-CM |
| I63.119 | Cerebral infarction due to embolism of unspecified vertebral artery | ICD-10-CM |
| I63.12 | Cerebral infarction due to embolism of basilar artery | ICD-10-CM |
| I63.13 | Cerebral infarction due to embolism of carotid artery | ICD-10-CM |
| I63.131 | Cerebral infarction due to embolism of right carotid artery | ICD-10-CM |
| I63.132 | Cerebral infarction due to embolism of left carotid artery | ICD-10-CM |
| I63.139 | Cerebral infarction due to embolism of unspecified carotid artery | ICD-10-CM |
| I63.19 | Cerebral infarction due to embolism of other precerebral artery | ICD-10-CM |
| I63.3 | Cerebral infarction due to thrombosis of cerebral arteries | ICD-10-CM |
| I63.30 | Cerebral infarction due to thrombosis of unspecified cerebral artery | ICD-10-CM |
| I63.31 | Cerebral infarction due to thrombosis of middle cerebral artery | ICD-10-CM |
| I63.311 | Cerebral infarction due to thrombosis of right middle cerebral artery | ICD-10-CM |
| I63.312 | Cerebral infarction due to thrombosis of left middle cerebral artery | ICD-10-CM |
| I63.319 | Cerebral infarction due to thrombosis of unspecified middle cerebral artery | ICD-10-CM |
| I63.32 | Cerebral infarction due to thrombosis of anterior cerebral artery | ICD-10-CM |
| I63.321 | Cerebral infarction due to thrombosis of right anterior cerebral artery | ICD-10-CM |
| I63.322 | Cerebral infarction due to thrombosis of left anterior cerebral artery | ICD-10-CM |
| I63.329 | Cerebral infarction due to thrombosis of unspecified anterior cerebral artery | ICD-10-CM |
| I63.33 | Cerebral infarction due to thrombosis of posterior cerebral artery | ICD-10-CM |
| I63.331 | Cerebral infarction due to thrombosis of right posterior cerebral artery | ICD-10-CM |
| I63.332 | Cerebral infarction due to thrombosis of left posterior cerebral artery | ICD-10-CM |
| I63.339 | Cerebral infarction due to thrombosis of unspecified posterior cerebral artery | ICD-10-CM |
| I63.34 | Cerebral infarction due to thrombosis of cerebellar artery | ICD-10-CM |
| I63.341 | Cerebral infarction due to thrombosis of right cerebellar artery | ICD-10-CM |
| I63.342 | Cerebral infarction due to thrombosis of left cerebellar artery | ICD-10-CM |
| I63.349 | Cerebral infarction due to thrombosis of unspecified cerebellar artery | ICD-10-CM |
| I63.39 | Cerebral infarction due to thrombosis of other cerebral artery | ICD-10-CM |
| I63.4 | Cerebral infarction due to embolism of cerebral arteries | ICD-10-CM |
| I63.40 | Cerebral infarction due to embolism of unspecified cerebral artery | ICD-10-CM |
| I63.41 | Cerebral infarction due to embolism of middle cerebral artery | ICD-10-CM |
| I63.411 | Cerebral infarction due to embolism of right middle cerebral artery | ICD-10-CM |
| I63.412 | Cerebral infarction due to embolism of left middle cerebral artery | ICD-10-CM |
| I63.419 | Cerebral infarction due to embolism of unspecified middle cerebral artery | ICD-10-CM |
| I63.42 | Cerebral infarction due to embolism of anterior cerebral artery | ICD-10-CM |
| I63.421 | Cerebral infarction due to embolism of right anterior cerebral artery | ICD-10-CM |
| I63.422 | Cerebral infarction due to embolism of left anterior cerebral artery | ICD-10-CM |
| I63.429 | Cerebral infarction due to embolism of unspecified anterior cerebral artery | ICD-10-CM |
| I63.43 | Cerebral infarction due to embolism of posterior cerebral artery | ICD-10-CM |
| I63.431 | Cerebral infarction due to embolism of right posterior cerebral artery | ICD-10-CM |
| I63.432 | Cerebral infarction due to embolism of left posterior cerebral artery | ICD-10-CM |
| I63.439 | Cerebral infarction due to embolism of unspecified posterior cerebral artery | ICD-10-CM |
| I63.44 | Cerebral infarction due to embolism of cerebellar artery | ICD-10-CM |
| I63.441 | Cerebral infarction due to embolism of right cerebellar artery | ICD-10-CM |
| I63.442  | Cerebral infarction due to embolism of left cerebellar artery | ICD-10-CM |
| I63.449  | Cerebral infarction due to embolism of unspecified cerebellar artery | ICD-10-CM |
| I63.49  | Cerebral infarction due to embolism of other cerebral artery | ICD-10-CM |
| I63.5  | Cerebral infarction due to unspecified occlusion or stenosis of cerebral arteries | ICD-10-CM |
| I63.50  | Cerebral infarction due to unspecified occlusion or stenosis of unspecified cerebral artery | ICD-10-CM |
| I63.51  | Cerebral infarction due to unspecified occlusion or stenosis of middle cerebral artery | ICD-10-CM |
| I63.511  | Cerebral infarction due to unspecified occlusion or stenosis of right middle cerebral artery | ICD-10-CM |
| I63.512  | Cerebral infarction due to unspecified occlusion or stenosis of left middle cerebral artery | ICD-10-CM |
| I63.519  | Cerebral infarction due to unspecified occlusion or stenosis of unspecified middle cerebral artery | ICD-10-CM |
| I63.52  | Cerebral infarction due to unspecified occlusion or stenosis of anterior cerebral artery | ICD-10-CM |
| I63.521  | Cerebral infarction due to unspecified occlusion or stenosis of right anterior cerebral artery | ICD-10-CM |
| I63.522  | Cerebral infarction due to unspecified occlusion or stenosis of left anterior cerebral artery | ICD-10-CM |
| I63.529  | Cerebral infarction due to unspecified occlusion or stenosis of unspecified anterior cerebral artery | ICD-10-CM |
| I63.53  | Cerebral infarction due to unspecified occlusion or stenosis of posterior cerebral artery | ICD-10-CM |
| I63.531  | Cerebral infarction due to unspecified occlusion or stenosis of right posterior cerebral artery | ICD-10-CM |
| I63.532  | Cerebral infarction due to unspecified occlusion or stenosis of left posterior cerebral artery | ICD-10-CM |
| I63.539  | Cerebral infarction due to unspecified occlusion or stenosis of unspecified posterior cerebral artery | ICD-10-CM |
| I63.54  | Cerebral infarction due to unspecified occlusion or stenosis of cerebellar artery | ICD-10-CM |
| I63.541  | Cerebral infarction due to unspecified occlusion or stenosis of right cerebellar artery | ICD-10-CM |
| I63.542  | Cerebral infarction due to unspecified occlusion or stenosis of left cerebellar artery | ICD-10-CM |
| I63.549  | Cerebral infarction due to unspecified occlusion or stenosis of unspecified cerebellar artery | ICD-10-CM |
| I63.59  | Cerebral infarction due to unspecified occlusion or stenosis of other cerebral artery | ICD-10-CM |
| I63.6  | Cerebral infarction due to cerebral venous thrombosis, nonpyogenic | ICD-10-CM |
| I63.8  | Other cerebral infarction | ICD-10-CM |
| I63.9  | Cerebral infarction, unspecified | ICD-10-CM |

**Supplemental Table 1D.** **ICD-9-CM and ICD-10-CM codes used to identify deep vein thrombosis**

|  |  |  |
| --- | --- | --- |
| Code | Description | ICD\_CM type |
| 451.11 | Phlebitis and thrombophlebitis of femoral vein (deep) (superficial) | ICD-9-CM |
| 451.19 | Phlebitis and thrombophlebitis of deep veins of lower extremities, other | ICD-9-CM |
| 451.83 | Phlebitis and thrombophlebitis of deep veins of upper extremities | ICD-9-CM |
| 453.40 | Acute venous embolism and thrombosis of unspecified deep vessels of lower extremity | ICD-9-CM |
| 453.41 | Acute venous embolism and thrombosis of deep vessels of proximal lower extremity | ICD-9-CM |
| 453.42 | Acute venous embolism and thrombosis of deep vessels of distal lower extremity | ICD-9-CM |
| 453.50 | Chronic venous embolism and thrombosis of unspecified deep vessels of lower extremity | ICD-9-CM |
| 453.51 | Chronic venous embolism and thrombosis of deep vessels of proximal lower extremity | ICD-9-CM |
| 453.52 | Chronic venous embolism and thrombosis of deep vessels of distal lower extremity | ICD-9-CM |
| 453.72 | Chronic venous embolism and thrombosis of deep veins of upper extremity | ICD-9-CM |
| 453.74 | Chronic venous embolism and thrombosis of axillary veins | ICD-9-CM |
| 453.75 | Chronic venous embolism and thrombosis of subclavian veins | ICD-9-CM |
| 453.76 | Chronic venous embolism and thrombosis of internal jugular veins | ICD-9-CM |
| 453.82 | Acute venous embolism and thrombosis of deep veins of upper extremity | ICD-9-CM |
| 453.84 | Acute venous embolism and thrombosis of axillary veins | ICD-9-CM |
| 453.85 | Acute venous embolism and thrombosis of subclavian veins | ICD-9-CM |
| 453.86 | Acute venous embolism and thrombosis of internal jugular veins | ICD-9-CM |
| I80.1 | Phlebitis and thrombophlebitis of femoral vein | ICD-10-CM |
| I80.10 | Phlebitis and thrombophlebitis of unspecified femoral vein | ICD-10-CM |
| I80.11 | Phlebitis and thrombophlebitis of right femoral vein | ICD-10-CM |
| I80.12 | Phlebitis and thrombophlebitis of left femoral vein | ICD-10-CM |
| I80.13 | Phlebitis and thrombophlebitis of femoral vein, bilateral | ICD-10-CM |
| I80.2 | Phlebitis and thrombophlebitis of other and unspecified deep vessels of lower extremities | ICD-10-CM |
| I80.20 | Phlebitis and thrombophlebitis of unspecified deep vessels of lower extremities | ICD-10-CM |
| I80.201 | Phlebitis and thrombophlebitis of unspecified deep vessels of right lower extremity | ICD-10-CM |
| I80.202 | Phlebitis and thrombophlebitis of unspecified deep vessels of left lower extremity | ICD-10-CM |
| I80.203 | Phlebitis and thrombophlebitis of unspecified deep vessels of lower extremities, bilateral | ICD-10-CM |
| I80.209 | Phlebitis and thrombophlebitis of unspecified deep vessels of unspecified lower extremity | ICD-10-CM |
| I80.21 | Phlebitis and thrombophlebitis of iliac vein | ICD-10-CM |
| I80.211 | Phlebitis and thrombophlebitis of right iliac vein | ICD-10-CM |
| I80.212 | Phlebitis and thrombophlebitis of left iliac vein | ICD-10-CM |
| I80.213 | Phlebitis and thrombophlebitis of iliac vein, bilateral | ICD-10-CM |
| I80.219 | Phlebitis and thrombophlebitis of unspecified iliac vein | ICD-10-CM |
| I80.22 | Phlebitis and thrombophlebitis of popliteal vein | ICD-10-CM |
| I80.221 | Phlebitis and thrombophlebitis of right popliteal vein | ICD-10-CM |
| I80.222 | Phlebitis and thrombophlebitis of left popliteal vein | ICD-10-CM |
| I80.223 | Phlebitis and thrombophlebitis of popliteal vein, bilateral | ICD-10-CM |
| I80.229 | Phlebitis and thrombophlebitis of unspecified popliteal vein | ICD-10-CM |
| I80.23 | Phlebitis and thrombophlebitis of tibial vein | ICD-10-CM |
| I80.231 | Phlebitis and thrombophlebitis of right tibial vein | ICD-10-CM |
| I80.232 | Phlebitis and thrombophlebitis of left tibial vein | ICD-10-CM |
| I80.233 | Phlebitis and thrombophlebitis of tibial vein, bilateral | ICD-10-CM |
| I80.239 | Phlebitis and thrombophlebitis of unspecified tibial vein | ICD-10-CM |
| I80.29 | Phlebitis and thrombophlebitis of other deep vessels of lower extremities | ICD-10-CM |
| I80.291 | Phlebitis and thrombophlebitis of other deep vessels of right lower extremity | ICD-10-CM |
| I80.292 | Phlebitis and thrombophlebitis of other deep vessels of left lower extremity | ICD-10-CM |
| I80.293 | Phlebitis and thrombophlebitis of other deep vessels of lower extremity, bilateral | ICD-10-CM |
| I80.299 | Phlebitis and thrombophlebitis of other deep vessels of unspecified lower extremity | ICD-10-CM |
| I82.2 | Embolism and thrombosis of vena cava and other thoracic veins | ICD-10-CM |
| I82.21 | Embolism and thrombosis of superior vena cava | ICD-10-CM |
| I82.210 | Acute embolism and thrombosis of superior vena cava | ICD-10-CM |
| I82.211 | Chronic embolism and thrombosis of superior vena cava | ICD-10-CM |
| I82.22 | Embolism and thrombosis of inferior vena cava | ICD-10-CM |
| I82.220 | Acute embolism and thrombosis of inferior vena cava | ICD-10-CM |
| I82.221 | Chronic embolism and thrombosis of inferior vena cava | ICD-10-CM |
| I82.4 | Acute embolism and thrombosis of deep veins of lower extremity | ICD-10-CM |
| I82.40 | Acute embolism and thrombosis of unspecified deep veins of lower extremity | ICD-10-CM |
| I82.401 | Acute embolism and thrombosis of unspecified deep veins of right lower extremity | ICD-10-CM |
| I82.402 | Acute embolism and thrombosis of unspecified deep veins of left lower extremity | ICD-10-CM |
| I82.403 | Acute embolism and thrombosis of unspecified deep veins of lower extremity, bilateral | ICD-10-CM |
| I82.409 | Acute embolism and thrombosis of unspecified deep veins of unspecified lower extremity | ICD-10-CM |
| I82.41 | Acute embolism and thrombosis of femoral vein | ICD-10-CM |
| I82.411 | Acute embolism and thrombosis of right femoral vein | ICD-10-CM |
| I82.412 | Acute embolism and thrombosis of left femoral vein | ICD-10-CM |
| I82.413 | Acute embolism and thrombosis of femoral vein, bilateral | ICD-10-CM |
| I82.419 | Acute embolism and thrombosis of unspecified femoral vein | ICD-10-CM |
| I82.42 | Acute embolism and thrombosis of iliac vein | ICD-10-CM |
| I82.421 | Acute embolism and thrombosis of right iliac vein | ICD-10-CM |
| I82.422 | Acute embolism and thrombosis of left iliac vein | ICD-10-CM |
| I82.423 | Acute embolism and thrombosis of iliac vein, bilateral | ICD-10-CM |
| I82.429 | Acute embolism and thrombosis of unspecified iliac vein | ICD-10-CM |
| I82.43 | Acute embolism and thrombosis of popliteal vein | ICD-10-CM |
| I82.431 | Acute embolism and thrombosis of right popliteal vein | ICD-10-CM |
| I82.432 | Acute embolism and thrombosis of left popliteal vein | ICD-10-CM |
| I82.433 | Acute embolism and thrombosis of popliteal vein, bilateral | ICD-10-CM |
| I82.439 | Acute embolism and thrombosis of unspecified popliteal vein | ICD-10-CM |
| I82.44 | Acute embolism and thrombosis of tibial vein | ICD-10-CM |
| I82.441 | Acute embolism and thrombosis of right tibial vein | ICD-10-CM |
| I82.442 | Acute embolism and thrombosis of left tibial vein | ICD-10-CM |
| I82.443 | Acute embolism and thrombosis of tibial vein, bilateral | ICD-10-CM |
| I82.449 | Acute embolism and thrombosis of unspecified tibial vein | ICD-10-CM |
| I82.49 | Acute embolism and thrombosis of other specified deep vein of lower extremity | ICD-10-CM |
| I82.491 | Acute embolism and thrombosis of other specified deep vein of right lower extremity | ICD-10-CM |
| I82.492 | Acute embolism and thrombosis of other specified deep vein of left lower extremity | ICD-10-CM |
| I82.493 | Acute embolism and thrombosis of other specified deep vein of lower extremity, bilateral | ICD-10-CM |
| I82.499  | Acute embolism and thrombosis of other specified deep vein of unspecified lower extremity | ICD-10-CM |
| I82.4Y  | Acute embolism and thrombosis of unspecified deep veins of proximal lower extremity | ICD-10-CM |
| I82.4Y1  | Acute embolism and thrombosis of unspecified deep veins of right proximal lower extremity | ICD-10-CM |
| I82.4Y2  | Acute embolism and thrombosis of unspecified deep veins of left proximal lower extremity | ICD-10-CM |
| I82.4Y3  | Acute embolism and thrombosis of unspecified deep veins of proximal lower extremity, bilateral | ICD-10-CM |
| I82.4Y9  | Acute embolism and thrombosis of unspecified deep veins of unspecified proximal lower extremity | ICD-10-CM |
| I82.4Z  | Acute embolism and thrombosis of unspecified deep veins of distal lower extremity | ICD-10-CM |
| I82.4Z1  | Acute embolism and thrombosis of unspecified deep veins of right distal lower extremity | ICD-10-CM |
| I82.4Z2  | Acute embolism and thrombosis of unspecified deep veins of left distal lower extremity | ICD-10-CM |
| I82.4Z3  | Acute embolism and thrombosis of unspecified deep veins of distal lower extremity, bilateral | ICD-10-CM |
| I82.4Z9  | Acute embolism and thrombosis of unspecified deep veins of unspecified distal lower extremity | ICD-10-CM |
| I82.5  | Chronic embolism and thrombosis of deep veins of lower extremity | ICD-10-CM |
| I82.50  | Chronic embolism and thrombosis of unspecified deep veins of lower extremity | ICD-10-CM |
| I82.501  | Chronic embolism and thrombosis of unspecified deep veins of right lower extremity | ICD-10-CM |
| I82.502  | Chronic embolism and thrombosis of unspecified deep veins of left lower extremity | ICD-10-CM |
| I82.503  | Chronic embolism and thrombosis of unspecified deep veins of lower extremity, bilateral | ICD-10-CM |
| I82.509  | Chronic embolism and thrombosis of unspecified deep veins of unspecified lower extremity | ICD-10-CM |
| I82.51  | Chronic embolism and thrombosis of femoral vein | ICD-10-CM |
| I82.511  | Chronic embolism and thrombosis of right femoral vein | ICD-10-CM |
| I82.512  | Chronic embolism and thrombosis of left femoral vein | ICD-10-CM |
| I82.513  | Chronic embolism and thrombosis of femoral vein, bilateral | ICD-10-CM |
| I82.519  | Chronic embolism and thrombosis of unspecified femoral vein | ICD-10-CM |
| I82.52  | Chronic embolism and thrombosis of iliac vein | ICD-10-CM |
| I82.521  | Chronic embolism and thrombosis of right iliac vein | ICD-10-CM |
| I82.522  | Chronic embolism and thrombosis of left iliac vein | ICD-10-CM |
| I82.523  | Chronic embolism and thrombosis of iliac vein, bilateral | ICD-10-CM |
| I82.529  | Chronic embolism and thrombosis of unspecified iliac vein | ICD-10-CM |
| I82.53  | Chronic embolism and thrombosis of popliteal vein | ICD-10-CM |
| I82.531  | Chronic embolism and thrombosis of right popliteal vein | ICD-10-CM |
| I82.532  | Chronic embolism and thrombosis of left popliteal vein | ICD-10-CM |
| I82.533  | Chronic embolism and thrombosis of popliteal vein, bilateral | ICD-10-CM |
| I82.539  | Chronic embolism and thrombosis of unspecified popliteal vein | ICD-10-CM |
| I82.54  | Chronic embolism and thrombosis of tibial vein | ICD-10-CM |
| I82.541  | Chronic embolism and thrombosis of right tibial vein | ICD-10-CM |
| I82.542  | Chronic embolism and thrombosis of left tibial vein | ICD-10-CM |
| I82.543  | Chronic embolism and thrombosis of tibial vein, bilateral | ICD-10-CM |
| I82.549  | Chronic embolism and thrombosis of unspecified tibial vein | ICD-10-CM |
| I82.59  | Chronic embolism and thrombosis of other specified deep vein of lower extremity | ICD-10-CM |
| I82.591  | Chronic embolism and thrombosis of other specified deep vein of right lower extremity | ICD-10-CM |
| I82.592  | Chronic embolism and thrombosis of other specified deep vein of left lower extremity | ICD-10-CM |
| I82.593  | Chronic embolism and thrombosis of other specified deep vein of lower extremity, bilateral | ICD-10-CM |
| I82.599  | Chronic embolism and thrombosis of other specified deep vein of unspecified lower extremity | ICD-10-CM |
| I82.5Y  | Chronic embolism and thrombosis of unspecified deep veins of proximal lower extremity | ICD-10-CM |
| I82.5Y1  | Chronic embolism and thrombosis of unspecified deep veins of right proximal lower extremity | ICD-10-CM |
| I82.5Y2  | Chronic embolism and thrombosis of unspecified deep veins of left proximal lower extremity | ICD-10-CM |
| I82.5Y3  | Chronic embolism and thrombosis of unspecified deep veins of proximal lower extremity, bilateral | ICD-10-CM |
| I82.5Y9  | Chronic embolism and thrombosis of unspecified deep veins of unspecified proximal lower extremity | ICD-10-CM |
| I82.5Z  | Chronic embolism and thrombosis of unspecified deep veins of distal lower extremity | ICD-10-CM |
| I82.5Z1  | Chronic embolism and thrombosis of unspecified deep veins of right distal lower extremity | ICD-10-CM |
| I82.5Z2  | Chronic embolism and thrombosis of unspecified deep veins of left distal lower extremity | ICD-10-CM |
| I82.5Z3  | Chronic embolism and thrombosis of unspecified deep veins of distal lower extremity, bilateral | ICD-10-CM |
| I82.5Z9  | Chronic embolism and thrombosis of unspecified deep veins of unspecified distal lower extremity | ICD-10-CM |
| I82.62  | Acute embolism and thrombosis of deep veins of upper extremity | ICD-10-CM |
| I82.621  | Acute embolism and thrombosis of deep veins of right upper extremity | ICD-10-CM |
| I82.622  | Acute embolism and thrombosis of deep veins of left upper extremity | ICD-10-CM |
| I82.623  | Acute embolism and thrombosis of deep veins of upper extremity, bilateral | ICD-10-CM |
| I82.629  | Acute embolism and thrombosis of deep veins of unspecified upper extremity | ICD-10-CM |
| I82.72  | Chronic embolism and thrombosis of deep veins of upper extremity | ICD-10-CM |
| I82.721  | Chronic embolism and thrombosis of deep veins of right upper extremity | ICD-10-CM |
| I82.722  | Chronic embolism and thrombosis of deep veins of left upper extremity | ICD-10-CM |
| I82.723  | Chronic embolism and thrombosis of deep veins of upper extremity, bilateral | ICD-10-CM |
| I82.729  | Chronic embolism and thrombosis of deep veins of unspecified upper extremity | ICD-10-CM |
| I82.A  | Embolism and thrombosis of axillary vein | ICD-10-CM |
| I82.A1  | Acute embolism and thrombosis of axillary vein | ICD-10-CM |
| I82.A11  | Acute embolism and thrombosis of right axillary vein | ICD-10-CM |
| I82.A12  | Acute embolism and thrombosis of left axillary vein | ICD-10-CM |
| I82.A13  | Acute embolism and thrombosis of axillary vein, bilateral | ICD-10-CM |
| I82.A19  | Acute embolism and thrombosis of unspecified axillary vein | ICD-10-CM |
| I82.A2  | Chronic embolism and thrombosis of axillary vein | ICD-10-CM |
| I82.A21  | Chronic embolism and thrombosis of right axillary vein | ICD-10-CM |
| I82.A22  | Chronic embolism and thrombosis of left axillary vein | ICD-10-CM |
| I82.A23  | Chronic embolism and thrombosis of axillary vein, bilateral | ICD-10-CM |
| I82.A29  | Chronic embolism and thrombosis of unspecified axillary vein | ICD-10-CM |
| I82.B  | Embolism and thrombosis of subclavian vein | ICD-10-CM |
| I82.B1  | Acute embolism and thrombosis of subclavian vein | ICD-10-CM |
| I82.B11  | Acute embolism and thrombosis of right subclavian vein | ICD-10-CM |
| I82.B12  | Acute embolism and thrombosis of left subclavian vein | ICD-10-CM |
| I82.B13  | Acute embolism and thrombosis of subclavian vein, bilateral | ICD-10-CM |
| I82.B19  | Acute embolism and thrombosis of unspecified subclavian vein | ICD-10-CM |
| I82.B2  | Chronic embolism and thrombosis of subclavian vein | ICD-10-CM |
| I82.B21  | Chronic embolism and thrombosis of right subclavian vein | ICD-10-CM |
| I82.B22  | Chronic embolism and thrombosis of left subclavian vein | ICD-10-CM |
| I82.B23  | Chronic embolism and thrombosis of subclavian vein, bilateral | ICD-10-CM |
| I82.B29  | Chronic embolism and thrombosis of unspecified subclavian vein | ICD-10-CM |
| I82.C  | Embolism and thrombosis of internal jugular vein | ICD-10-CM |
| I82.C1  | Acute embolism and thrombosis of internal jugular vein | ICD-10-CM |
| I82.C11  | Acute embolism and thrombosis of right internal jugular vein | ICD-10-CM |
| I82.C12  | Acute embolism and thrombosis of left internal jugular vein | ICD-10-CM |
| I82.C13  | Acute embolism and thrombosis of internal jugular vein, bilateral | ICD-10-CM |
| I82.C19  | Acute embolism and thrombosis of unspecified internal jugular vein | ICD-10-CM |
| I82.C2  | Chronic embolism and thrombosis of internal jugular vein | ICD-10-CM |
| I82.C21  | Chronic embolism and thrombosis of right internal jugular vein | ICD-10-CM |
| I82.C22  | Chronic embolism and thrombosis of left internal jugular vein | ICD-10-CM |
| I82.C23  | Chronic embolism and thrombosis of internal jugular vein, bilateral | ICD-10-CM |
| I82.C29  | Chronic embolism and thrombosis of unspecified internal jugular vein | ICD-10-CM |

**Supplemental Table 1E.** **ICD-9-CM and ICD-10-CM codes used to identify device-related thrombosis**

|  |  |  |
| --- | --- | --- |
| Code | Description | ICD\_CM type |
| 996.72  | Other complications due to other cardiac device, implant, and graft | ICD-9-CM |
| 996.74  | Other complications due to other vascular device, implant, and graft | ICD-9-CM |
| 996.79  | Other complications due to other internal prosthetic device, implant, and graft | ICD-9-CM |
| T82.86  | Thrombosis of cardiac and vascular prosthetic devices, implants and grafts | ICD-9-CM |
| T82.867  | Thrombosis due to cardiac prosthetic devices, implants and grafts | ICD-10-CM |
| T82.867A  | Thrombosis due to cardiac prosthetic devices, implants and grafts, initial encounter | ICD-10-CM |
| T82.867D  | Thrombosis due to cardiac prosthetic devices, implants and grafts, subsequent encounter | ICD-10-CM |
| T82.867S  | Thrombosis due to cardiac prosthetic devices, implants and grafts, sequela | ICD-10-CM |
| T82.868  | Thrombosis due to vascular prosthetic devices, implants and grafts | ICD-10-CM |
| T82.868A  | Thrombosis due to vascular prosthetic devices, implants and grafts, initial encounter | ICD-10-CM |
| T82.868D  | Thrombosis due to vascular prosthetic devices, implants and grafts, subsequent encounter | ICD-10-CM |
| T82.868S  | Thrombosis due to vascular prosthetic devices, implants and grafts, sequela | ICD-10-CM |

**Supplemental Table 2A.** **ICD-9-CM and ICD-10-CM codes to identify HIV**

|  |  |  |
| --- | --- | --- |
| Code | Description | ICD\_CM type |
| 042  | Human immunodeficiency virus [HIV] disease | ICD-9-CM |
| 042.0  | HIV & SPECIFIC INFECTION | ICD-9-CM |
| 042.1  | HIV CAUSING OTHER INFECTION | ICD-9-CM |
| 042.2  | HIV WITH MALIGN NEOPLASM | ICD-9-CM |
| 042.9  | UNSPECIFIED AIDS | ICD-9-CM |
| B20  | Human immunodeficiency virus [HIV] disease | ICD-10-CM |
| B97.35  | Human immunodeficiency virus, type 2 [HIV 2] as the cause of diseases classified elsewhere | ICD-10-CM |
| O98.7  | Human immunodeficiency virus [HIV] disease complicating pregnancy, childbirth and the puerperium | ICD-10-CM |
| O98.71  | Human immunodeficiency virus [HIV] disease complicating pregnancy | ICD-10-CM |
| O98.711  | Human immunodeficiency virus [HIV] disease complicating pregnancy, first trimester | ICD-10-CM |
| O98.712  | Human immunodeficiency virus [HIV] disease complicating pregnancy, second trimester | ICD-10-CM |
| O98.713  | Human immunodeficiency virus [HIV] disease complicating pregnancy, third trimester | ICD-10-CM |
| O98.719  | Human immunodeficiency virus [HIV] disease complicating pregnancy, unspecified trimester | ICD-10-CM |
| O98.72  | Human immunodeficiency virus [HIV] disease complicating childbirth | ICD-10-CM |
| O98.73  | Human immunodeficiency virus [HIV] disease complicating the puerperium | ICD-10-CM |
| R75  | Inconclusive laboratory evidence of human immunodeficiency virus [HIV] | ICD-10-CM |
| Z11.4  | Encounter for screening for human immunodeficiency virus [HIV] | ICD-10-CM |

**Supplemental Table 2B.** **ICD-9-CM and ICD-10-CM codes to identify hepatitis C**

|  |  |  |
| --- | --- | --- |
| Code | Description | ICD\_CM type |
| 070.41  | Acute hepatitis C with hepatic coma | ICD-9-CM |
| 070.44  | Chronic hepatitis C with hepatic coma | ICD-9-CM |
| 070.51  | Acute hepatitis C without mention of hepatic coma | ICD-9-CM |
| 070.54  | Chronic hepatitis C without mention of hepatic coma | ICD-9-CM |
| 070.70  | Unspecified viral hepatitis C without hepatic coma | ICD-9-CM |
| 070.71  | Unspecified viral hepatitis C with hepatic coma | ICD-9-CM |
| V02.62  | Hepatitis C carrier | ICD-9-CM |
| B17.10  | Acute hepatitis C without hepatic coma | ICD-10-CM |
| B17.11  | Acute hepatitis C with hepatic coma | ICD-10-CM |
| B18.2  | Chronic viral hepatitis C | ICD-10-CM |
| B19.20  | Unspecified viral hepatitis C without hepatic coma | ICD-10-CM |
| B19.21  | Unspecified viral hepatitis C with hepatic coma | ICD-10-CM |
| Z22.52  | Carrier of viral hepatitis C | ICD-10-CM |

**Supplemental Table 3.** **Adjusted IRR (95% CI) by age group**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Age groups  | MI | PE | Ischemic stroke | DVT | Device-related |
| 0–17 years | 3.80 (0.54–27.01) | N/A | 11.21 (1.17–107.72) | 3.81 (0.60–24.19) | 46.56 (14.31–151.48) |
| 18–35 years | 3.81 (0.77–18.89) | 2.26 (0.54–9.47) | 1.87 (0.17–20.64) | 0.87 (0.25–3.07) | 5.07 (1.14–22.65) |
| 36–45 years | 2.05 (0.76–5.53) | 1.07 (0.23–5.00) | 0.68 (0.08–5.63) | 3.05 (1.04–8.99) | 12.10 (1.26–116.52) |
| 46–55 years | 0.75 (0.30–1.83) | 0.40 (0.05–3.05) | 1.52 (0.71–3.28) | 1.68 (0.63–4.47) | 7.03 (2.86–17.47) |
| 56–65 years | 1.26 (0.49–3.21) | 0.56 (0.07–4.59) | 1.13 (0.47–2.68) | 2.32 (0.97–5.58) | 0.57 (0.07–4.88) |
| 66–75 years | 2.19 (0.85–5.64) | 0.67 (0.08–5.76) | 1.27 (0.43–3.71) | 0.52 (0.11–2.41) | 0.00 (0.00–0.00) |
| ≥76 years | 0.34 (0.04–2.62) | 1.42 (0.28–7.13) | 2.94 (1.26–6.86) | 1.39 (0.41–4.77) | 1.01 (0.12–8.74) |
| All | 1.23 (0.82–1.86) | 0.89 (0.45–1.77) | 1.48 (1.01–2.16) | 1.53 (1.00–2.32) | 7.93 (5.00–12.59) |

For each cohort, any person with a previous occurrence of the TE being investigated (e.g. MI, PE, ischemic stroke, DVT, device-related thrombosis) was excluded.Rates were adjusted by evidence of HIV or hepatitis C in the 6 months prior to index date.

CI, confidence interval; DVT, deep vein thrombosis; HA, hemophilia A; IRR, incidence rate ratio; MI, myocardial infarction; N/A, not applicable; PE, pulmonary embolism; TE, thrombotic event.