

## Supplemental Material

Obesity, hypertension, diabetes mellitus, heart failure, chronic pulmonary disease, pulmonary circulation disorders, renal failure, fluid and electrolyte disorders, and peripheral arterial disease were identified from the Elixhauser comorbidities included in the National Inpatient Sample database.

International Classification of Diseases, Ninth Edition, Clinical Modification (ICD-9-CM) and Clinical Classification Software (CCS) codes were used to identify remaining baseline comorbidities, procedures, and outcomes.

### Variables identified using ICD-9-CM and CCS codes:

Prolonged mechanical ventilation (ICD-9 code)

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“9672” CONT MECH VENT 96+ HRS (Begin 1991)

Smoking (ICD-9 code)

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“V1582” HISTORY OF TOBACCO USE

“3051” TOBACCO USE DISORDER OCT 94

“30510” TOBACCO ABUSE-UNSPEC

“30511” TOBACCO ABUSE-CONTINUOUS

“30512” TOBACCO ABUSE-EPISODIC

“30513” TOBACCO ABUSE-IN REMISS

“64900” TOBACCO USE DISORD-UNSP (Begin 2006)

“64901” TOBACCO USE DISOR-DELLIV (Begin 2006)

“64902” TOBACCO USE DIS-DEL-P/P (Begin 2006)

“64903” TOBACCO USE DIS-ANTEPART (Begin 2006)

“64904” TOBACCO USE DIS-POSTPART (Begin 2006)

Dyslipidemia (CCS code)

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“53”

CAD (CCS code)

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“101”

Acute kidney Injury (CCS code)

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“157”

Acute MI (CCS code)

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“100”

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Acute Intracranial hemorrhage (ICD-9 code)

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“430” SUBARACHNOID HEMORRHAGE  
“431” INTRACEREBRAL HEMORRHAGE  
“4320” NONTRAUM EXTRADURAL HEM  
“4321” SUBDURAL HEMORRHAGE  
“4329” INTRACRANIAL HEMORR NOS

Postop shock (ICD-9 code)

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“9980” POSTOPERATIVE SHOCK (end 2011)  
“99800” Postoperative shock NOS (Begin 2011)  
“99801” Postop shockcardiogenic (Begin 2011)  
“99802” Postop shock septic (Begin 2011)  
“99809” Postop shock other (Begin 2011)  
“78550” SHOCK NOS  
“78551” CARDIOGENIC SHOCK  
“78552” SEPTIC SHOCK (Begin 2003)

Postop cardiogenic shock (ICD-9 code)

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“99801” Postop shockcardiogenic (Begin 2011)  
“78551” CARDIOGENIC SHOCK

Postop septic shock (ICD-9 code)

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“99802” Postop shock septic (Begin 2011)  
“78552” SEPTIC SHOCK (Begin 2003)

Postop hemorrhage requiring transfusion (CCS code)

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“222”

Vascular complications (ICD-9 code)

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“9010” INJURY THORACIC AORTA  
“9011” INJ INNOMIN/SUBCLAV ART  
“9012” INJ SUPERIOR VENA CAVA  
“9013” INJ INNOMIN/SUBCLAV VEIN  
“90140” INJ PULMONARY VESSEL NOS  
“90141” INJURY PULMONARY ARTERY  
“90142” INJURY PULMONARY VEIN  
“90182” INJ INT MAMMARY ART/VEIN  
“90183” INJ MULT THORACIC VESSEL  
“90189” INJ THORACIC VESSEL NEC  
“9019” INJ THORACIC VESSEL NOS  
“9020” INJURY ABDOMINAL AORTA  
“90210” INJ INFER VENA CAVA NOS  
“90219” INJ INFER VENA CAVA NEC  
“90224” INJURY CELIAC AXIS NEC  
“90240” INJURY RENAL VESSEL NOS  
“90241” INJURY RENAL ARTERY  
“90242” INJURY RENAL VEIN  
“90249” INJURY RENAL VESSEL NEC  
“90250” INJURY ILIAC VESSEL NOS  
“90251” INJ HYPOGASTRIC ARTERY  
“90252” INJURY HYPOGASTRIC VEIN  
“90253” INJURY ILIAC ARTERY  
“90254” INJURY ILIAC VEIN  
“90259” INJURY ILIAC VESSEL NEC  
“90287” INJ MULT ABD/PELV VESSEL  
“90289” INJ ABDOMINAL VESSEL NEC  
“9029” INJ ABDOMINAL VESSEL NOS  
“9040” INJ COMMON FEMORAL ARTER  
“9041” INJ SUPERFIC FEMORAL AR  
“9042” INJURY FEMORAL VEIN  
“9043” INJURY SAPHENOUS VEIN  
“9047” INJURY LEG VESSELS NEC  
“9048” INJURY LEG VESSEL NOS  
“9049” BLOOD VESSEL INJURY NOS  
“99812” HEMATOMA PROC CX (Begin 1996)  
“9982” ACCIDENTAL OP LACERATION  
“E8700” ACC CUT/HEM IN SURGERY  
“E8705” ACC CUT/HEM W CATHETERIZ  
“E8706” ACC CUT/HEM W HEART CATH  
“E8708” ACC CUT IN MED CARE NEC  
“E8709” ACC CUT IN MED CARE NOS

“86804” RETROPERITONEUM INJ-CL  
“9992” VASC COMP MED CARE NEC  
“99771” VASCULAR CX MESENTERIC ARTERY  
“99772” VASCULAR CX RENAL ARTERY (Begin 2001)  
“99779” VASCULAR CX OTHER VESSELS (Begin 2001)

Vascular complications requiring surgery (ICD-9 code)

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“3931” SUTURE OF ARTERY  
“3941” POSTOP VASC OP HEM CONTR  
“3949” VASC PROC REVISION NEC  
“3952” ANEURYSM REPAIR NEC  
“3953” ARTERIOVEN FISTULA REP  
“3956” REPAIR VESS W TIS PATCH  
“3957” REP VESS W SYNTH PATCH  
“3958” REPAIR VESS W PATCH NOS  
“3959” REPAIR OF VESSEL NEC

The links of National Inpatient Sample website for ICD-9-CM and CCS codes:

[https://www.hcup-us.ahrq.gov/db/tools/I9\\_Formats.TXT](https://www.hcup-us.ahrq.gov/db/tools/I9_Formats.TXT)

<https://www.hcup-us.ahrq.gov/toolssoftware/ccs/AppendixASingleDX.txt>

<https://www.hcup-us.ahrq.gov/toolssoftware/ccs/AppendixBSinglePR.txt>